THE CULTIVATOR.

THIRD] TO IMPROVE THE SOIL AND THE MIND. [SERIES.

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TERMS—SIXTY CENTS PER YEAR.—Ten copies of THE CULTIVATOR and Ten of the ANNUAL REGISTER OF RURAL AFFAIRS, with one of each free to the Agent, Six Dollars.

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"THE COUNTRY GENTLEMAN," a weekly Agricultural Journal of 16 quarto pages, making two volumes yearly of 416 pages, at $2.50 per year, is issued by the same publishers.

The Cultivator & Country Gentleman.

One Hundred Bushels of Corn per Acre.

We have had occasion to examine a great many good corn-fields in different years, and the practice adopted in obtaining the crops. We are satisfied that those good farmers who raise from sixty to eighty bushels of shelled corn per acre, (and there are many such), do not get enough, or so much as they might under the best management. We allude, of course, to those regions of country whose strong, warm and fertile soils are well adapted to this crop. By the following mode of management we are satisfied that one hundred bushels per acre, as an average, might be obtained in many places:

First, procure the best seed and keep it so by constantly selecting the finest ears from the best stalks. If a small variety, it must be planted thicker than for a large one—that is, the number of stalks on an acre must correspond with the character of the variety. We have known many instances where a small early sort has been rejected as worthless, because it was planted too thin—and, on the other hand, some large sorts have succeeded imperfectly by being planted too densely.

Second, the soil. It is premised that this is sufficiently drained to become warmed early in the season and to admit of free and friable working. We will suppose that it is pasture. Spread broadcast during the autumn all the coarse and other manure that can be obtained, enough to give it some thirty or forty loads per acre; but, if sufficient cannot be had, complete the amount by drawing out and spreading during winter fresh manure from the stable as fast as it accumulates. The rains and melting snows which occur by the approach of warm weather the following spring, will dissolve the best parts of the manure, and carry them down along the grass roots, depositing them in the soil in a more complete degree of intermixture with its particles than could ever be accomplished by the use of the finest harrow.

Third. In the spring a short time before planting, invert the sod to a moderate depth, and pulverize its its upper surface by means of a Shares' Harrow, which prevents the sod from being torn up, at the same time that the mellowing process is twice as deep as with a common harrow. Before using this harrow, unless the soil has already been made very rich, spread over the surface of the inverted sod about ten loads per acre of short or old manure or compost. The harrow will work it well in, and it will not only accelerate the growth of the young plants, but tend to keep the top-soil mellow and prevent crusting. Drop a handful of fine manure in each hill at planting.

Fourth, plant the corn. If planted in drills, (everything else being well done,) the crop will be one-third to one-fourth greater than if planted in hills forming rows each way, because the stalks will be more evenly distributed, which always contributes to the largest crop. A good drill corn-planter will do this work rapidly, and so straight that the cultivator may be run very close to the rows; and if the land has been kept clean, but little hand-hoeing will be necessary. Next to drills, the practice of planting in hills close in the row, (as, for instance, by means of Billings' Corn-Planter,) will be found best; and lastly, planting in hills forming rows both ways, although the latter will not yield so much corn, yet the saving of labor which it will effect on land infested with weeds may more than counterbalance the increased amount of the crop obtained from drills; but, in order that the stalks may be as evenly distributed as possible, the hills should be as near together as practicable to allow the cultivator to pass, and leaving fewer stalks in the hill. If, for example, the distance each way is only three feet apart, four stalks may be enough for small Northern corn, and two stalks for Gourd seed or Dent corn. It is always best to plant plenty of seed, and thin out regularly when necessary. A few years' practice will enable any good farmer to judge the nearest distances that may be allowed, to admit every ear to fill well.

Fifth. Now comes a most important part, namely, the cultivation. Keep the horse passing between the rows every week, from the time that the corn is fairly above the surface until it becomes so large as to close up the rows. Actual experiment has shown that this constant mellowing and breaking of the crust adds several bushels per acre to the crop.

If these directions are faithfully carried out, and the

work is all done in the proper season, we shall feel much disappointed if our best farmers, in good corn-growing regions, do not obtain an average of one hundred bushels of shelled corn to the acre; and if they do not find by keeping a careful account that they obtain a greater net profit than when only fifty bushels to the acre are obtained. At least, the experiment is worth trying, and certainly cannot result in any great disaster.

MANAGEMENT OF FRUIT TREES.

Seasonable Hints.

Forming Heads to Young Trees.—Young trees may be easily trained to any desired shape. If you wish to have crooked, awkwardly-shaped trees when they become old, let the winds, storms, and the accidents of growth, give them form when they are young. But if straight, handsome, symmetrical, even-headed, well-formed trees, that will bear good, evenly-distributed accessible crops, they may be easily had by spending a few minutes in forming the heads when they are young. A single rub of the thumb on a delicate shoot will do more now than half an hour with the ax or saw when the tree becomes large. First determine a proper height for the head. Take off or pinch back, if necessary, such shoots as are too long or too high; allow a certain number of side shoots to remain to form a well shaped top, and rub off the rest. As these side-shoots subsequently grow and branch, the same care should be observed for several subsequent years. Remember, however, that a young tree, especially if recently transplanted, will not bear a heavy lopping of leaves while in full growth. Circumstances will vary the amount, but as a general rule never take off from a tree in summer more than one-third to one-half its leaves—the less the better.

Cultivators who raise their own trees should observe carefully that all the sprouts are kept closely rubbed below inserted grafts or buds.

Young Cherry Trees.—The question is often asked, what is the reason that my young cherry trees died about mid-summer—they looked very healthy in spring and started to grow—and all at once the leaves withered, and they are now dead. This is a very common disaster—occasioned by the sensitiveness of the roots of this tree to the heat of a dry, mid-summer soil. It is easily and completely prevented by mulching the well-mellowed surface, taking care to do it early enough in the summer, and not waiting till the trees are beyond recovery.

Staking Trees.—Crooked young trees may be made quite straight by tying them to upright stakes early in summer, or before the young, forming wood has matured and stiffened. It sometimes happens, also, that a one-sided or badly-formed head may be brought into a handsome shape by properly tying the shoots while they are yet fresh and soft in early summer.

Thinning Fruit.—In good bearing seasons there are but few trees that do not bear too many specimens for their full development in size and flavor. A successful peach-marketer found that, by taking off two-thirds of the young peaches, the remainder grew so much larger as to make the same number of bushels as were borne on the unthinned trees, while the quality and appearance were so greatly improved that they sold for triple the price—that is, brought nearly a dollar and a half per basket, while the others could scarcely be sold at fifty cents. Another important point was gained, namely, a material lessening of the labor in picking. A successful marketer of fine apples found his profits largely increased by thinning out all knotty, wormy and other imperfect specimens when the fruit was about one-half or two-thirds grown, or as soon as the difference between good and bad could be readily distinguished. The labor of this thinning he found to be not one-fourth as much as is usually expended in gathering the crop.

Blackberries.—Pinch in the rapidly-growing canes of the blackberry as soon as they have attained the height of four feet; and as soon as the side-shoots, which will then be thrown out, reach a length of eighteen inches, pinch these back also—thus continue to keep them pinched so as to preserve a neat, compact form—to increase their fruitfulness another year and to prevent the annoyance of long, straggling briers and branches. A friend remarked, to whom similar directions were given: "Oh, yes, that's true. I can remember when a boy down in Dartmouth, that we found that blackberry bushes always bore the biggest crops that had been partly browsed down by the cows."

Setting Out Strawberries.—Spring is the best time, and next to this, immediately after bearing, when the operation will succeed well, if the plants are carefully lifted with the spade, the earth shaken out carefully so as to leave all the fibres, and these fibres then spread out on all sides like an open umbrella, when they are planted. Settle the earth by pouring on water, and then mulch the surface with manure. All the old and large leaves should be cut off, and only the young and expanding ones allowed to remain. Plants thus treated will grow well through the summer, and bear good crops the following season.

Cherry Stones intended for planting should be dried just sufficiently to prevent moulding, or else mixed while fresh with moist sand, and buried in the earth under a flat stone. These, if planted very early the next spring, will grow freely, but if allowed to become quite dry, they can scarcely ever be made to vegetate.

Sales of Stock.—We are informed that Mr. H. G. White, South Framingham, Mass., has lately sold to Paschall Morris of Philadelphia, the following Short-Horns:

Madonna 10th, by Marmion 1843, out of Madonna 5th by John Bull 3025—Lucy, by Osceola 789, out of Arabella 2d by Logan 95—Lottie, by Humboldt 4900, out of Violet by Sachem 3390.

Nenotuk, by Mameluke 3114, out of Aurelia by Osceola 789—General Sherman, by Young Monarch 3605, out of Yarico 2d by East Windsor 56—Lady Audley by Stephenson, (see vol. 7 A. H. B.) out of Fairstar by King Philip 1740—Pilgrim, by Monitor 5019, out of Lucy by Osceola 789, and Northerner by Marmion 1843, out of Arabella 4th, by John Bull 3025.

Also, to G. K. Willmer, New-York, *Mille Maud*, by Cayuga Prince 2609, out of Jessie by Double Duke 1451½.

To J. T. Clarke, Boston, *Oakwood*, by Rob Roy 4320, out of Laurestina, by Earl of Warwick 465. To D. Heikes, Plainfield, Pa., Outlaw, by Marmion 1843, out of Rena by Earl of Warwick 465.

And to H. L. Stowe, Worcester, Mass., *Governess 3d*, by Duke of Orleans 3877, out of Gov. 2 by Lord Raglan 3094.

Mr. White says he has never known a time when the demand for valuable stock, both cattle, sheep and pigs, was so good.

Onondaga Wool-Growers' Association.

Some very sensible and *a propos* remarks are adjoined to the Preamble and Constitution of the Onondaga Co. Wool-Grower's Association in a little pamphlet just issued. Among other objects proposed by that body, is to place the Association in correspondence with some gentleman in New-York who will furnish the condition of the wool market, perhaps daily, thus putting the members on an equal footing with the wool merchants and speculators as regards prices. Ordinary intelligence would be furnished to all, but information of special importance, to those only who have joined the Association and are entitled to its benefits. In this way it is hoped to render the members independent of such misrepresentations as some buyers resort to, occasionally by fictitious bargains with those who are supposed to exert an influence on their neighbors, and by other means known to the trade. On the customs of buyers we also have the following:

There are sharks who buy as well as those who sell; men who are totally incompetent to deal fairly and honorably; men who know but little or nothing of the wool they purchase. They purchase by the pound at a commission, and go by the neighborhood. They are told by the merchant that they can pay so much here, and so much there. You *must* buy this man's wool is possible, and you must *not* buy that man's, pre-judging it without seeing it. They purchase wool as they purchase wheat, calling it all alike, or if they wish to make a display of wisdom in the extreme, they will go into "sheep talk," learnedly, of "grades and pedigrees." They "shrink" Mr. A.'s rams' fleeces one-third because they are "so heavy." Mr. B. divides his fleeces and does not brag that his fleeces were heavier than Mr. A.'s, and saves his "shrinkage." Mr. C. has driven his flock through a brook and *calls* them washed, and gets a full price. Mr. D. has not pretended to wash his flock, but they are cleaner than Mr. C.'s; still he must submit to "one-third shrinkage." This is not a fair, honorable or a just way to deal, and what all honorable and fair-minded wool-growers desire is simply this: Every *flock* and every *clip* shall *stand upon its own merits*. Because Mr. A. had a nice lot of wool in 1860 that was in better condition than his neighbor's, it ought not to be taken for granted that in 1864 it is still the same; neither because Mr. B. was sick in 1861 and could not attend to his sheep-washing, ought it to be deemed to his disadvantage that it is still the same. If Mr. C. purchased ten ewes in 1862 that had a Vermont pedigree, it ought not to be believed by the buyer that his flock of two hundred are all Vermonters, and rate him accordingly. We desire that *judges* of wool shall buy wool, and if there are any valid reasons why they cannot pay one man as much as they could his neighbor, to state the reason candidly and fairly, which will be of benefit to the grower, and of ultimate benefit to those who buy.

The reputation of "Vermont sheep" alluded to above, has led to innumerable cases of imposture, and this pamphlet well asserts that it is more difficult to protect the wool-grower from ravaging deceivers than his sheep from savage dogs. One device of imposters is exposed, and its correctness is vouched for in a private letter we have received from a gentleman of standing in Onondaga, who knows whereof he affirms. It is stated that young sheep are taken from Onondaga county to the east, for the sake of bringing them back, or carrying them still farther west, "*as pure Vermonters*," and that cases of the kind have already occurred the present season. Now the imposture here does not consist so much in the *character of the sheep*, which, as the pamphlet says, are "undoubtedly as good as nine-tenths of the Vermont sheep," but because by misrepresentation as to their origin, an exorbitant price is obtained for them, resting on an entirely fictitious basis. For the fact that this *can* be done, the responsibility rests in a great degree with those who have been engaged in systematic efforts to stimulate the "wool fever,"—to give currency to high-sounding names as applied to pedigrees of probably just as mixed and uncertain origin as any others in the great Merino family,—and thus to manufacture an exaggerated reputation for the sheep of whole districts, as well as of particular localities and flocks.

Said a gentleman in examining a remarkably perfect ram owned by a farmer in Central New-York, about which there seemed to be nothing else affording ground for serious criticism, as he was canvassing its merits with the owner: "But how much would you give if you could say that he was a genuine 'Infantado'?"

Now wool-growers justly complain of buyers for rating prices too much on the reputation of a flock, and too little on the actual merits of the fleece. Can they hold themselves wholly faultless, in this matter, in what they pay for their own sheep? We are compelled to think that with rams and ewes, as well as with wool, it is too much "you *must* buy this man's if possible, and you must *not* buy that man's," prejudging without due examination of the real merits and value involved.

HEDGE TRIMMING.

Eds. Co. Gent.—There has been several inquiries of late for machines to trim hedges, so arranged as to be worked by horse power. Several years ago there were quite a number of models on exhibition at our County and State Fairs. All claimed superior excellence. Hedges could be trimmed at the rate of scores of miles a day, or at least as far as a span of horses could walk. What has become of these little fixings I know not. None in practical operation have as yet reached this section of country.

On Hedge Trimming.—I offer a few remarks, as the subject of hedging is much discussed, and certainly ought to be more so, and not only talked about, but time and money spent to bring this kind of fencing into general use, particularly in those sections where timber is scarce, and soil and climate are favorable to the hedge.

That a machine for the purpose of trimming, drawn by horses, can be made to do the work I do not doubt, provided the ground on either side of the row is smooth. But there are so many uneven places to pass over—side hills, ups and downs, and sloughs to pass—will make it very difficult that a machine can be made profitable to successfully trim our hedges. Everything we can arrange by way of machinery hitched to a horse, should require the attention of our inventors and mechanics. Much has been done within the last few years; more is yet needed. I am getting off the track. I am not to discuss machinery in this article, but to tell you how I trim my hedges. In doing so I must tell you of my blunders as well as of my success. My first plants were set eleven years ago, around my orchard, standing 8 feet from the outside row of trees, and well trimmed four years, and was at that time a very nice hedge. I was then visited by a horticulturist who knew more about fruit trees than he did of hedging with the Osage Orange. He advised me

to let my hedge grow untrimmed, to protect my orchard from winds. I did so. In two years' time the hedge was up about 15 feet, outgrowing the apple trees, and causing the limbs next the hedge to bend in and upwards, thus spoiling the shape and growth of the apple trees. This I could not endure. How to remedy the evil was not only a study, but a hard job to undertake. Not only were the trees being damaged, but the hedge was by this time not a hedge, but a tall belt of trees, limbs dying out, and some trees being more thrifty than others, made the undergrowth die, leaving many places where the old cow could, by shutting her eyes and turning her head sideways, squeeze through. To find an animal with horns on in an orchard of young apple trees, and many other kinds of fruit trees, could not be endured patiently. The hedge must come down, or one row of apple trees in a ten acre orchard must soon be ruined.

The bush-hook (called by some, hawk-bill) with a long handle, was put to work. To attack a hedge 15 feet high, with limbs from 1 to 2 inches in diameter, with a thorn at each leaf an inch long, required some nerve. "No dodging the question"—the work must be done. With buckskin mittens, and clothes buttoned closely to the body, the job was commenced. The orange trees were cut off just 4 feet from the ground, where the top of a good hedge ought to have been, and where I left it three years before, when I stopped trimming it. The lower limbs were shortened in to about 1 to 2 feet from the stumps. There was an unsightly row of stumps, and, to all appearance, (as this was in March,) as dead as sticks of cord-wood. The work was done, but would I ever get a hedge as it was at the end of the first five years? Time would tell. Here was the brush to dispose of, buckskin mittens, new and sound, must cover the hands; but to pile this stiff, crooked, snarled stuff was the "tug of war." Patience and perseverance finally, and with a pitchfork to pick up the fine, broken, dead limbs, completed the work thus far. But to burn these large piles of brush lying so loosely was another item in the bill of work. Taking a windy day, large quantities of straw were placed on the windward side, and the torch applied. With the long handled fork, as the brush burned, the outer parts of the pile were put into the fire. About one hundred rods of what was once a perfect hedge, was treated in this way, at a cost of at least thirty cents a rod.

Frequent Trimming.—During the last four years I have trimmed twice in a season, by cutting off the shoots down to the old stumps, trimming the sides but little. At the present time my old hedges are about 5 feet high, and by keeping the top limbs cut back, side shoots come out about 4 feet wide, so thick when the leaves are on that it is a perfect mat, which nothing can either go or see through bigger than a rabbit. In *frequent trimming* my horses have learned me a lesson. Having a lane of about 100 rods from my barn to a back pasture, one side of which is fenced with hedge, as my horses go to and from pasture they stop on their way and nip the tender shoots as they put forth. In this way new buds start out shoots at every place where it has been bitten off, making the most perfect hedge I ever saw. Cattle do not meddle with it.

Since my experience with my hedge around my orchard, I have trimmed all my hedges, having about 600 rods, twice a year, excepting that of the first years' growth after being set in the rows. This I do not trim until fall or the next spring. I have trimmed on the last of June and last of September, but this is not enough, as the hedge proves which has been trimmed by my horses more or less every day from the first of June until it stops growing in the fall. I shall cut this season every month, or oftener, as long as it grows—particularly on top, as shoots naturally grow faster than side limbs. They must be kept off so as to throw out side branches. It is not the height that makes the nice hedge; regard should be had to width, and if all are kept even none can outgrow and shade and overpower its neighbor. It is the thick heavy mat of small cross limbs that makes a hedge for beauty and for use. All should be trimmed after the leaves have fallen in the fall; the wood is tender and cuts easy; if left until spring, the limbs are hard, making double the work to cut it. Then in the first trimming in June nothing but the tender shoots that are as soft as a pig-weed are to be treated with the knife. No limbs should be allowed to remain on a hedge over one month's growth on all hedges over one year old.

What to Trim with.—I use a common corn knife all the time except on my oldest hedge. With this, with one hand, I can trim from one to two hundred rods a day easily and perfectly; with one stroke can cut all the shoots that come in its way, and with a back drawn stroke cut the sides as easily as desired. My oldest hedge, which is too high by a foot, being about 5 feet high, is trimmed with a knife made from an old scythe blade about 3 feet long, and handle 1¼ feet—(any blacksmith can fix one.) With both hands I can sweep off the tender limbs of a hedge at the rate of half a mile a day. My old bill-hook is lent somewhere in the neighborhood; I don't care where, as I don't want it; my hedge shears are broken, and would have no use for them if whole.

If hedges in other parts of the northwest will compare with those in this vicinity, there is not one-fourth of it now even *good* hedge, to say nothing about the *beauty* and ornament of a *perfect* hedge. It must be taken care of from the start. Nothing will pay better. It is hoped that our Commissioner, Mr. Newton, or somebody else will devise some means to procure the osage seed from Texas for planting next spring. ("Oh the wicked rebellion.") It would bring $20 a bushel readily.

I have about 50 trees of 11 years' growth, from which I hope to raise some seeds. Last year I had some 20 oranges (osage,) the seeds of which I planted in May. Most of it germinated, and is now growing. I hope soon to determine whether we can raise our own seeds.

If our western farmers would better cultivate and trim their hedges, we would soon have what we much need, *beautiful and perfect fences.*

Rock Island, June 15, 1864. C. G. TAYLOR.

Chess.—A sensible contributor of the Ohio Farmer writes: "I have known men that called themselves good farmers sow grain that had from 15 to 30 grains of chess in every broadcast handful, and still protest that they sowed clean grain. If some of our opticians could construct a pair of goggles through which farmers could see chess wherever it grows, I think that the theory of its growing from wheat would soon die out, and it would be a great blessing to mankind."

FOREIGN CORRESPONDENCE.

Preparing the Land for Fall Crops.

MUNSTER, PRUSSIA, June 10, 1864.

MESSRS. EDITORS—Fall wheat and fall rye being the staple crops in Germany, and considered the most important ones—(Indian corn not ripening at all)—and as, besides, our mode of operating in raising these crops is based on many hundred years experience, I will briefly state how we prepare the land before sowing, leaving it to your readers how much or how little of my remarks may be applicable to American Agriculture. From my own experience I know that, especially in the Western States, this chapter is capable of some improvement yet.

We have two main rules:

1. To give the field as much summer-fallow as possible.

2. To give it time to settle between the seed-furrow and the sowing of the seed.

Besides it is important to know that wheat and rye require different modes of treatment. For rye it is best to plow two or three times; for wheat one plowing is much preferable to two. Young farmers, sometimes wanting to excel, will plow twice for wheat, but this is bad practice; it loosens the land too much, and the wheat afterwards falls a prey to worms. Of course there are exceptions to this rule; there are cases where two plowings become a necessity even for wheat.

It is also of great importance to have a proper rotation of crops. Wheat, as well as rye, will do best where they are preceded by rape seed or flax, next best after clover or beans, tolerably well after ruta bagas or potatoes, more doubtful after turnips and beets. On most soils a good crop of wheat may be followed safely by rye; in fewer cases wheat twice; in even a smaller class of soils wheat after rye may do; only in exceptional cases wheat or rye may follow oats. Oats are mostly the last link in our rotations; they care nothing for fresh manure, and will do well where other crops would require manuring; but the field needs a strong dressing of manure after it has borne oats, so we let it mostly be followed by beets, potatoes, or other root crops, or beans or rape seed, seldom by clover.

I must also remark that we raise more rye than wheat, rye bread being the principal article of home consumption; but of late years the culture of wheat has greatly increased, wheat being a more profitable crop for export.

Now to my above rules:

1. We have one mode of plowing for which in America you have not even a name; I shall call it "skimming." This operation cannot be carried out with an American plow. I have on my farm here seven different plows in use, all made in American shops, from the Moline steel plow and Mohawk Valley Clipper, down to the New-York Eagle, but with none of them, excellent as they are for deep plowing, can I "skim" the field. Still this is a highly beneficial operation. It consists in just skimming off the top or sod, aiming to leave between every two furrows a narrow strip (½ to 1 inch wide) untouched. The plowshare therefore is set slanting, going about 1 to 1½ inches deep at the landside, and slanting out to the surface. We accomplish this operation of skimming generally by the common plow (on wheels) and one horse, but of late have introduced plows with two or three, or even five shares. I prefer the plow with three shares, as this can be worked by two horses, will finish five acres per day, and work well under all circumstances. Now you may ask, what this skimming is good for? It gives the land a summer fallow, which is equal in effect to a half-manuring. It not only exposes the turned up furrow to the full action of sun and air, but this very furrow serves as a mulching for the layer below, *completely changing its appearance and texture.* This is of the greatest importance. Under such a mulching the land will be enriched by the treasures of the atmosphere. Only compare a field so skimmed three weeks ago with one that has been lying unskimmed, and you will need no more argument. But your readers will say, why not plow deep at once? For two reasons; I want the summer fallow to commence as early as possible. When cutting wheat, for instance, I have all the cocks put up in straight rows running the way I want to plow; and the very next day after the cradle follows the skimmimg plow. We cannot wait till the wheat may be drawn off, for we would lose one week, and the land would bake. Just examine the soil on the day of mowing, and then again two weeks later where the sun has burned on the naked ground, and you will be satisfied; experience will confirm your observation. This may suffice for the present. It would be impossible to give the fields a deep furrow and keep up with the mowers; by merely skimming this can be done; the deep plowing comes thereafter; the land never becomes too hard for it where it has been skimmed. The surface soil having had the benefit of a fallow is then turned below, and another layer exposed to fallowing. This skimming is much preferable to the work done by cultivators, for in skimming I turn under all weeds and grasses, converting them into manure, while the cultivator makes them into hay. This skimming also does not make the land too loose for wheat. I will merely add that on clover land we generally omit the skimming, giving a deep furrow, directly following the scythe.

We want the ground to settle before sowing. Never sow wheat or rye on new plowed land, if you can help it, but give it the last furrow from 6 to 8 weeks before sowing time. This is of the highest importance. The soil then becomes thoroughly pulverized by the alternate action of rain and sun—it rots; aye, it will rise (puff) like a well made dough—I can describe it in no other way—the land must look as if yeast had been put into it and had done its work well. Then is the time to sow. A farmer must be able to discover when this moment has arrived when he walks across the fields, by the feeling of his steps, or by rubbing some dirt between his fingers; if he cannot, he is like a physician that cannot feel his patient's pulse.

But my letter is growing too long. Let me close by saying that it will not do simply to cover the seed by the harrow, but that the harrow and roller united must completely pack the ground and destroy every small interval created by the plow. Your feet dare not sink in; the harder the better. Pack it at the bottom; leave it open on the surface. Small clods on the surface are an advantage; dust on top is not desirable. I mistrust all smooth rollers; but with best success have covered the seed (wheat or rye) by Croskill's clod-breaker alone, and finished the whole job without any harrow.

Of course there are soils so infested by certain weeds and there are climates so dry and burning that in such localities it will not do to plow the ground eight weeks before sowing for the last time. L.

Parasites Infesting the Bodies of Animals.

MESSRS. EDITORS—In the Co. GENT of the 17th of March, I gave some account of several kinds of parasites or worms, infesting different portions of the bodies and intestines of sheep and lambs in England, causing serious losses to many of the flock-masters there. The history and ravages of these different parasites were mostly derived from a lecture by Prof. Simonds, given at a weekly meeting of the Royal Ag. Society, about one year ago. I refer to this subject now, partly to show with what tenacity of life many kinds of insects have been endowed, or in other words, to exhibit the wonderful skill evinced by the Creator in the preservation, reproduction, and perpetuity of various kinds of insects infesting "the internal parts of animals,"—man included.

In my letter in the Co. GENT. of 17th of March, I gave Prof. Simond's statements in reference to the introduction of the tape-worm into the intestines of man —introduced there, as he says, by the person's eating "measly pork." If the small specks found in measly pork, can, when cooked and eaten by man, be transformed into fifteen-feet tape-worms, it is at least a wonderful transformation. Some may be incredulous in respect to this matter; but I have so much confidence in the Professor's statements, that I would suffer pretty severely from hunger before I would knowingly eat measly pork, and I am the more confirmed in this, from just reading the following frightful account in the Boston Traveller of the 12th of April. The account is headed, "Shocking Fatality:"

"A few months since a hundred persons set down at a festive celebration in the Hartz Mountains, where pork in various forms was the principal food. Of these, eighty persons are in their graves, and of the remainder the majority linger with a fearful malady. This strange event has led to the discovery that this food was charged with flesh worms in all stages of development, or *trichnical*, found in the muscular tissues of the survivors, and traced to the pork. These flesh worms are not *killed* by ordinary *cooking*, and multiply rapidly by thousands. A great alarm exists in Germany, and the eating of pork in many places is now entirely abandoned."

The above is certainly a very frightful account, but I think it is quite evident that the worms, derived from the pork eaten by the members of that picnic party, were different from those bred from measly pork.

The tape-worm, now so common *and found in sheep*, I think must be derived from some other source than that of measly swine. Many sheep and lambs have died in this vicinity within the past few months, and upon dissection, tape-worms were found in their intestines, in length ranging from 12 to 23½ feet. The cause of their being there is a mystery that is unexplained, but the sad consequences arising from the worm in our sheep, are well understood.

Prof. Simonds, in his lecture, described the *Filaria bronchialis*, found within the bronchial tubes of calves and sheep, producing that form of disease which was known or designated as "huskiness." These parasites are sometimes found in the windpipe and bronchial tubes of lambs in immense numbers, "and it was not an uncommon thing for 50, 60, or 70 per cent. of a flock of lambs to be destroyed by this cause." How the animal first received these worms, was a question difficult to answer.

"These worms are ova-oviviparous, that is, they produce eggs in the bronchial tubes, where they propagate rapidly; nevertheless he believed it equally true that ova ejected with any mucus that might be coughed up,—and cough was the leading symptom of this disease in sheep,—would remain as ova for an indefinite length of time upon pasture land, *without losing their vital properties or power of development*, and that animals fed upon the ground would receive the eggs in the process of feeding, and that then the young worms would be quickly produced, for these ova might be retained about the mouth with the mucus or saliva long enough for some of them to be hatched. They would then find their way not into the stomach, but into the bronchial tubes."

Instinct, or some other equivalent, prompts these insects to go into the windpipe rather than into the stomach, and to perpetuate and disseminate these creatures among the flocks, the ova have been purposely designed to retain their vital properties for a great length of time upon the grass, if not sooner fed off by the sheep while grazing.

The horse bot-fly deposites its eggs upon the hair of the legs, flanks, lips, and under the throat of the horse. It is stated that there are three kinds of them.

"The large bot-fiy of the horse has spotted wings. She lays her eggs about the knees; the small red tailed species on his lips, and the brown farrier bot-fly under his throat. By rubbing and biting the parts where the eggs are laid, the horge gets them into his mouth and swallows them with his food, where the warmth and moisture of the stomach soon hatches the young of the eggs. The insects fasten themselves to the inside of the stomach, and live there until full grown, when they unfasten themselves and are voided in the dung of the horse. The nits or eggs of the bot-fly will retain their vitality for months, and perhaps years, and then if the right conditions are brought about, the young bot will burst into active life and pursue the same round of its predecessors, thus doing its part in keeping up the annual tribe of bot-flies.

"Bracy Clark, Esq., who has published some very interesting remarks on the bots of horses and other animals, maintains that bots are rather beneficial than injurious to the animals they infest."

Probably there are those who differ from Esquire Clark in reference to this matter. Bot-flies neither bite nor sting, yet many horses seem to dread them, as if they were capable of inflicting the most severe pain upon them. I suppose this fear arises from some instinctive feeling the horse possesses, that the fly has the power in some way of doing them great injury; hence his uneasiness while the fly is dodging about him. The several stages composing the life of the bot-fly seem to be a round-about way of continuing the species—first, a small nit upon the the hair of the horse's leg: then a grub in the stomach of the horse; next a chrysalis or pupa burrowing in the ground; and lastly it appears in the perfect or winged state, ready to deposite its eggs for a succeeding progeny of bots.

In July and August the gad-fly deposits its eggs in the hide along the backs of cattle. In a few months the grub is developed, and remains in the abscess it has formed in the hide until the spring months, when it escapes from its residence, burrows in the earth, changes to a perfect insect, and then emerges to pursue the course of its parent.

Some persons suppose these worms (or warbles) do not interfere with the condition of the animal. Others think that they cause great annoyance, fever and emaciation.

A single gad-fly pouncing upon one of the cattle of a large herd, causes a stampede among them that would hardly be exceeded by the appearance of "an army with banners." Now if the worms deposited by the fly were beneficial to the cattle, why should they become so frightened by the appearance of a single gad-fly? Probably the pain inflicted by the slight puncture in the hide by the fly in depositing its eggs does not exceed that caused by the bite of a common fly or a mosquito. I believe that an inherent instinct teaches the cattle that this particular fly is capable of inflicting upon them serious pain and suffering, and this same instinct prompts them to avoid its attacks, the same as it prompts the sheep to guard against and avoid the sheep bot or gad-fly. This fly lays its eggs in the nostrils of sheep, the eggs soon hatch, and the maggots crawl from thence into the hollows in the bones of the head. Sometimes these large grubs or bots congregate by the score or more in the head of a single sheep. One of our farmers recently lost a high priced Atwood buck. Upon dissection, large numbers of the grub were found in its head, and even in the cavities of the piths of the horns. The owner has no doubt the death of his buck was occasioned by the "grub in the head." But there are some persons that seem to think sheep oftener die for want of *grub* in the belly than they do from grub in the head.

A correspondent from Zanesville, Ohio, in the Co. GENT. of the 7th of April, gives us an account of his loss of lambs recently. From his account I have no doubt the death of his lambs was occasioned by the presence of the larva of the gad-fly in the head and wind-pipe. He says: "Some writers think the grub in the head do sheep no injury." So others think bots in horses beneficial rather than otherwise, and so of worms in the backs of cattle—and by the same train of reasoning why not include tape worms in the intestines of *we humans*, and other animals, lice on calves, ticks on sheep and lambs, &c., &c.

Warner, N. H. LEVI BARTLETT.

Cutting Grass Early and Feeding Sheep on Mowing Lands.

One of the best and cheapest methods of improving mowing lands is by feeding off the aftermath by sheep and folding them on them at night.

In order to do this satisfactorily, the farmer must of course look out that there shall be an aftermath to feed off, and to secure that, he must cut his first crop early. The advantages of early cutting are appreciated by our farmers more and more every year, and no one, who has ever tried it, will return to the old custom of postponing haying until "after the Fourth."

Last year, by the 20th of June, all my rough, rocky pieces were mowed and the hay housed. I commenced on the 9th, with a piece of orchard grass in full blossom. On the 20th I began with the Buckeye and cut as fast as six men, a tedder and horse-rake could take care of it, and before the 4th of July more than half my hay was housed without a drop of rain, the rest being easily saved in the few bright days of that memorable rainy July.

Now, farmers, for the results: First. The rain which caused long faces to many of you on beholding your fields scattered over with drenched hay cocks, started up a rich aftermath on my mowings, gladdening my eyes with its promise, and before most of my neighbors had harvested their first crop, dead ripe, made in the fields before it was cut and afterwards, soaked with rain, my machine was again at work cutting a second crop nearly as heavy as the first, after which a good third crop sprang up to be fed off by sheep.

Second. I had enough rowen to feed a flock of 114 sheep from the 1st December until the middle of May, one colt, and one to three calving cows, and have one-half ton left.

Third. The first crop, most of which I sold, weighed very heavily for its bulk. A fair sized load, to weigh a ton, always running over 100 to 200 lbs. It gave universal satisfaction to the buyer and brought a higher price per ton than the average market rates.

Fourth. My flock has not suffered as many have during the past winter from "grub in the head." I have not lost a sheep, and some of my ewes to-day, after yielding a heavy fleece, are worth $14 per head for the butcher.

These, brother farmers, are not theories, but facts; they are facts, moreover, which touch our pockets, and such is the kind of facts which we want.

Now for the second part of my subject.

I am strongly in favor of keeping up mowing lands by top-dressing, and have found no method of top-dressing to answer so well as by folding sheep upon them during the fall of the year. I commenced last year the middle of August to fold my flock of 150, and continued until December, except rainy nights late in October and November, and in that time manured several acres. I used the movable hook and eye fence sufficient to enclose a space of 50 feet square, moving it to a fresh spot every day. The effect was wonderful. The first rain caused a rich growth to spring up, which was again fed off, and the present season these lands, which have been mowed for five years, look as though they were to be cut for the first time, and the white weed, which last year composed most of the crop, now scarcely shows its hoary head. The crop will be, without exaggeration, twice as heavy as on adjoining lands, previously in the same condition, but which had not the benefit of sheep-folding.

Nor is the effect of manure applied in this manner exhausted in one year. My first experiment was in the fall of 1862, when I folded on a piece of mowing which had scarcely paid for the cutting; in 1863 I took off two heavy crops, and the present crop promises to fully equal that of last year.

I have previously given my views on this subject in the Co. GENT., but I regard it as one of great importance, and I trust this statement of facts will induce many to try the experiment for themselves the coming season. The cost is trifling and the profit large.

West Roxbury, Mass. EDWARD R. ANDREWS.

Good Layers.—I purchased five Golden and Silver-crested Hamburghs (premium birds,) of Mr. Van Keuren, Ulster Co., about the 10th of April last year, and from that time they laid daily until November, when they began moulting with one exception,—she laid until the second week in December. The day she laid her last egg her tail dropped, and I did not suppose she could live through the winter, but she moulted beautifully, and is now laying again with my young fowls. If any of your readers have any better breed for laying qualities and beauty combined, I should like very much to hear of them. G. M. C.

DWARF PEARS—MAGNOLIA, &c.

In a recent examination of the grounds of Ellwanger and Barry of Rochester, some objects of unusual interest were observed. One of these was a beautiful tree of *Magnolia macrophylla* in bloom—now about fifteen feet high and some three or four inches in diameter. It stands in open ground and proves hardy. It is sheltered by adjacent trees from severe winds. The largest leaves measure one foot wide and two feet long, exclusive of the foot-stalks. The flowers are 15 to 18 inches in diameter; the petals 9 inches long and five or six inches wide; they are nearly or quite white, and the flower possesses the rich character of a lily. They appear in succession for a month or more. I have never seen anything to excel them in magnificence, except those of the world-renowned *Victoria regia*. I observed several trees of the Sequoia, or great giant tree of California, which were 15 feet high and 5 inches in diameter. Sheltered by trees from prevailing winds, they prove quite hardy.

An excellent evergreen screen was observed on another portion of the grounds, forming a beautiful and smooth wall of verdure now over ten feet high. The Norway spruce trees which form it were planted seven years ago. It has been cut back once a year with a knife. Several different trees are here undergoing trial to prove their adaptation for hedges. Among the most promising is the honey locust, the hedge having been planted about four years ago, and kept regularly cut back in the usual manner. It forms a very compact head from the base upward, and is now nearly four feet high. A. J. Downing objected to the honey locust for this purpose, remarking that there was no "hedginess" about it; but as here managed, the growth has all the denseness of the best grown live fences.

Fig. 1.

Fig. 2.

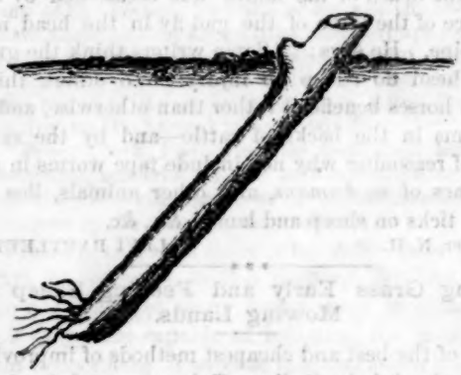
The proprietors of these grounds are quite successful in changing the tops of bearing dwarf pear trees. A fine dwarf orchard of Virgalieus, which a few years ago gave several excellent crops, becoming subsequently almost worthless from the cracking of the fruit, have in three years been entirely changed into handsome pyramids of other varieties, now in full bearing. The change is effected by cutting off the ends of all the side branches, at regular distances from the main or vertical stem, the lower ones being the longest, and gradually shortening upwards, so as to give a pyramidal shape to the trees thus cut back for grafting. The grafts are then inserted in these shortened side-branches, and, growing freely, soon form beautiful trees, even exceeding in symmetry those trained in the usual way. By the third year such trees begin to bear profusely. This mode of changing the varieties in dwarf pears will often be found convenient where those previously worked with poor sorts have grown several years. A skillful grafter will change the heads of a large number of trees in a single day. The annexed figure (fig. 1) represents the tree as it appears when cut back ready for grafting. Fig. 2 shows the tree before cutting back

RAISING GRAPES FROM SINGLE EYES.

There have been several modes of raising grapes from single eyes. One of the most common has been by grafting them upon pieces of grape root, and placing them in good mold made from rotton sods, wood, dirt, &c., over bottom heat. But there are several serious objections to this plan, among which are that sometimes the scion fails to grow, and the root grows in its place, thereby causing mixtures; another, that the roots are generally much poorer than when grown by other methods.

I have been very successful in growing the Delaware and other sorts the present season, by the following method, scarcely a bud having failed when it was a good one.

Good, well ripened wood of large growth, is made up into lengths about two and a half inches long, having the bud at the upper end, about a quarter of an inch



from the top. Pure clean building or lake sand is placed about three inches deep over the tanks in a forcing house, into which the pieces of grape wood are placed at an angle of about 45°, leaving the bud just at the surface of the sand. They are placed in rows about two inches apart, and about an inch apart in the rows, and the sand well pressed to the wood.

The sand should be warmed by the water in the tanks to the temperature of 65°, for a day or two, gradually raising it in a few days to 90° or 95°. The air in the house should be kept 10° degrees lower if possible than the sand, at all times. Keep the sand moderately wet, and the temperature as even as possible, avoiding sudden changes. In about a week the buds will begin to swell, and in three or four weeks fine roots will break out in the bark, generally towards the lower end.

When the roots are three or four inches long they should be potted off in mold, made either by rotten sods or wood earth and sand, mixed in about equal proportions, and given plenty of water for some time,

until well established in their new home, when they may either be left in the pots, or if the house is too full, turned into open ground.

The advantages of pure sand for striking the cuttings, seems to consist in its being a good conductor of heat, and does not pack hard by wetting. Of course, the young roots grow from the organized matter in the cutting, the same as potato sprouts grow from a potato.

It is important to keep the air in the house colder than the sand, for the object is to stimulate the cutting at the root, and not by having a warm air and cold sand, stimulate the buds to throw leaves before the roots are formed, thereby causing the exhaustion of the cutting. For this reason it is best to start the cuttings in the house in the early part of April, while the air is cool, so the temperature of the house can be regulated.

It is very important to use none but good buds, as no process can give vitality to dead ones, or any success to imperfect ones—scarcely one in a hundred failing to grow when good buds were used.

Macedon Nurseries, 1864. E. W. HERENDEEN.

[For the Country Gentleman and Cultivator.]

DIRECTIONS FOR BREAD-MAKING.

Baking.—Your oven, whether it be a brick oven, a Dutch oven, or the oven of your stove, should be strictly clean, and of the right heat when your baking is put in. A brick (baker's) oven is heated by burning fine split wood in it; the Dutch oven by being turned up, as also the lid, against a clear fire. The stove-oven is heated by being closed while a good fire burns in the wood department. The heat of the Dutch oven is kept up by occasional supplies of fresh coals. A tin reflector kept bright within, bakes well before a good fire, and there is no surer way of having rolls or loaves rise well, than in one of these convenient little affairs. In baking always apply the strongest heat at first to the bottom of your loaf. To know when your bread is well done, break open a roll, biscuit, or muffin. Sound a loaf as you would a melon; it sounds a little hollow and is elastic when well done. Into cakes or butter-bread, stick a fork; if the tines come out clean, they are fit for the table.

Yeast being used in many breads, we give a few infallible receipts, and after, some specific recipes for bread.

Hop-Yeast.—Boil a handful of hops in a quart of water until reduced half. Strain it, and when it will just not scald the flour, stir in enough to make a good thick batter; when it cools a little, add a salt-spoon of salt, a table-spoon of sugar, and a spoonful of good yeast. Set in a warm place to rise. When light, keep close and cool. In summer you may make of two parts Indian meal and one of flour, a dough stiff enough to roll into a smooth sheet; cut this into cakes of an inch square, and dry in the shade. Each of these cakes dissolved in a little water, will be equal to a spoonful of yeast. These are convenient, as obviating the necessity of fresh yeast so often. Yeast sours quickly when kept warm, and consequently makes sour bread.

The wild flower known as Life-everlasting makes as good yeast as hops.

Potato Yeast.—We use it entirely now. It is made by peeling, boiling and mashing good potatoes to smooth pulp; let the mass be made to about the consistency other kinds of yeast, with the water in which the potatoes are boiled. Mix in, while quite warm, a pinch of salt and spoonful of yeast. Preserving a spoonful of yeast for a start, you may make a little fresh every time you wish rolls, and be sure, if the flour is good, of having them white, light and sweet.

Salt-Rising.—This generally popular variety of light bread is chiefly used in summer, being less apt to sour than hop rising. It is not so easy to have in winter, as it does not rise so easily as other forms of bread in which baker's or other yeast is used.

Take of boiling water a pint, or any quantity you wish; cool it until you can taste it without scalding your lips; put in it a pinch of salt, a heaping spoonful of corn meal, and as much flour as will make a smooth and rather thick batter. Sprinkle flour over it, and set it in a warm place to rise. An earthen vessel is best to rise yeast or bread in. It should be covered close. If the weather is very cold, set your crock in quite warm water, keeping the heat thus equal all around, which promotes the rising, but you must be watchful and keep the water at an even temperature.

Salt-Rising Bread.—If you wish to make more bread than your cup of yeast will work up, add to it some sweet milk or cream, corn gruel or warm water. Mix into every quart of best flour (that has dried in the sun or under your stove while the yeast was coming) a teaspoonful of salt and a piece of butter, or suet, as big as a pigeon's egg. Now make it into a rather soft mass, kneading it until the dough blisters freely. Make into loaves, and when well risen, bake until it sounds and feels done. When the top crust is as thick and brown as you like, lay a thick paper over it to prevent baking more. This and all light breads, rolls and rusks, when the crust begins to brown slightly, should be rubbed over with a little milk and butter melted together. They should be also kept in earthen crocks, or wrapped in damp cloths, so as to keep from hardening.

Remarks.—All breads are better mixed with milk. It should be sweet, unless you use soda to neutralize the acid. In summer it should be fresh if used in yeast or light breads, as it may sour in the process of rising.

Rolls.—Stir a tablespoon of yeast into a teacup of warm water; work up with it flour into a soft dough, allowing a teaspoon of salt and piece of shortening as large as the yolk of an egg to each quart of flour. When this rises lightly, knead it again until it blisters freely; make it out in rolls, rise and bake. The Virginia Housewife directs rolls to be risen three times. The first time in a yeast, the second in a sponge, and then after being made out into rolls.

The Shakers, whose exquisite breads are far-famed, use hop yeast, rise twice, and make up large quantities at once. They set away a batch of dough in a cold place, and make from it rolls at any time. The only housewife we have ever known rival them makes up her bread entirely of fresh potato yeast. The time which bread takes to rise varies according to weather or the temperature of the room in which the process is undergone. When it worked the first time and is made into rolls, if it is too fast for you, set them away in a cool place until it is time to use them. They will be ready for breakfast, and may be baked in a dish or in muffin rings, and you will call it Sally Lun or Muffins, accordingly.

Cast-Iron Sugar-Pans.—Wm. W. Horton gives in the Rural New-Yorker the following description of his cast-iron pans for the manufacture of maple sugar: "My pan is three by six feet square, six inches deep at the edge, and near seven inches in the middle; it will hold forty gallons and boil. Thickness of sides five-sixteenths on top, and one-half an inch at the bottom; bottom five-eighths thick. Think if I were to get any more, would have two, three by four each, and set one higher than the other on the same arch, and let sap run from one into the other while boiling, or of such size as would suit the bush I was fitting up for."

HARVESTING BARLEY.

EDS. CO. GENT.—In answer to your request and X. I. X.'s inquiry in reference to harvesting barley, I will say that I harvested six hundred and eighty bushels last year, and trust there was not ten bushels shelled on the ground. I will tell my mode of harvesting. Let others speak, and I will listen.

There is a large amount of work to be done before harvesting time comes. No crop we sow should receive more attention and none pays me better. It is so common a thing to say we ought to put our crops in well, so often unheeded, I would like to say something that X. I. X. will remember. As a general rule, do not sow barley on greensward unless it was well plowed the fall before; I mean plowed deep and all turned over, that there may be a smooth surface. Let the ground be cultivated lengthwise of the furrow before sowing, whether greensward or not. I am in the habit of sowing three bushels to the acre, cultivating and dragging after the seed has been evenly sown until the ground is in capital order, no matter what the hired man or neighbors may say about it. I am always my own judge in the matter. I keep a heavy roller, good cultivator, heavy or coarse drag and fine-toothed one, all in the field at the same time, use them alternately as they may serve the cause best. When you are satisfied you have done justice to the farming fraternity, take the wagon and one land at a time—let the stone, roots and heavy corn stubble be removed. After that comes the bushing; the bush may be made by boring about six two-inch holes in a 4 by 4 hard wood scantlin six feet long. Cut thorn bushes if they are to be found. They will last about four years. You will want a log-chain and bar to draw them in to your bush-head tight—finish your bush before you undertake to use it. It will pay best interest on the capital invested of any tool on the farm, particularly on the barley field, or if you wish to seed down any other lot.

Barley should and must be sown early in the season. Should your work press hard, the last rolling (I roll and drag if any lumps) may be delayed long after the grain is up—any time within one or three weeks will answer.

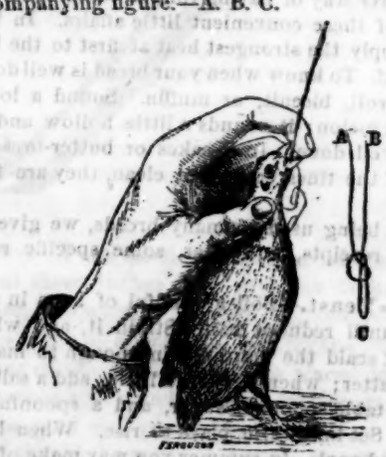
With us, the two-rowed barley will do to harvest in about ninety days after it is sown—the four-rowed barley is about five days earlier. It is presumed X. I. X. has nothing in his field to prevent driving round the piece. About five days before, the majority of farmers will admit your grain is ready to cut, let there be a swath mowed round the lot and the reaper brought to bear on the same. I attach an extra wide board (I use Manny's reaper with Wood's improvement) and extend the width of the platform on my reaper for barley.

You have got, or ought to have, a good team to cut barley, one that will start quick and walk fast. The man that polks off the grain will soon get so large a heap on the platform the team must stop; the barley is all poked off at one place; the team starts quick, and little time is lost. The next time round the barley is left at the same places, and so on until you get about three rounds; then the rest of the help commence cocking up. Of course you will not commence cutting until the dew is all off and straw dry, so far as water is concerned. Do not wait until the barley gets wilted to cock up. I never waited one minute, and never lost one peck of grain on the account of heating in the cock or turning black in the mow. If your ground is level, the machine takes the barley off much cleaner than you can rake it by hand or any way, and six times as fast. Great care must be taken of the cocks. Some of the tops will blow off; they all settle down. I watch them close and pull the bottom, and all loose straw must be replaced often on the top. They remain in the field from three to ten days, more or less, according to weather and circumstances. In cocking up, one man follows with a hand-rake; if he is industrious, keep him; if otherwise, do not let him return to your field again, and you will be astonished to see how clean your ground is. On the day when the barley is to be drawn, those cocks must be upset; place your fork at the bottom and turn it right over; loosen out what may be damp, and only stir enough to last a few hours—it will get too dry and slippery if there is any wind. One man, with what I call a drag-rake, will clean the ground fast as two can pitch on. You will have bright plump barley, and little shelled on the ground. If you cut all by hand, let each man mow alone, and mow double swaths. If it is cut early as it should be, it will not be crinkled down to prevent mowing each way. It will take about four times as much hand-raking to do a good job where it is cut by hand as if cut by a machine. I never saw a good job of barley harvesting on rough and lumpy or stony ground. DANIEL PARKER.

Watertown, N. Y., June, 1864.

CARE OF YOUNG TURKEYS.

Lice and worms in the throat destroy more young turkeys than all other causes combined. Let them be oiled beneath their wings, both the old ones and young ones, and let the worms be drawn out of their throat with a horse hair, having a slip-knot near the loop, as shown in the accompanying figure.—A. B. C.



The writer was at the residence of Mr. C. B Thorne, Skaneateles, last season, whose turkeys were suffering severely from worms in the throat. Some of them could scarcely peep, because their throats were so full.

Some of them were caught while I was there, and held as represented in the illustration, with the mouth open. The worms could be seen distinctly in the wind-pipe, through the hole in the root of the tongue.

Prepare a horse hair, A. B. C., and push the end C., down into the wind-pipe, and twist it around a few times and draw it out. The little flesh-colored worms about an inch long, will be entangled in the loop and knot. Nine worms were taken from the throat of only one turkey, when I was at the residence of Mr. Thorne alluded to.

When Turkeys do not peep clearly, or seem drooping and stupid, it is a certain evidence of lice or worms.

S. EDWARDS TODD.

Cases for Conveying Small Fruits to Market.

A convenient, simple, light and cheap set of drawers, or flat boxes, for conveying berries to market, in quantity, much used in some portions of the West, is constructed in the following manner, and may be found valuable to many cultivators:

1st. Prepare five drawers, each two feet long and twenty inches wide, and two inches deep in the clear. It is best to have them made of pine, ⅝ inches thick. It is most convenient to have the stuff all sawed the same width, say 2¼ inches wide, and use it this width for the bottom, leaving them about 1.16 of an inch apart for ventilation. The front and back sides of each drawer should extend ⅝ of an inch beyond the ends, as shown in fig. 2. Next, provide two strips of strong wood (white ash for example) 2 inches wide and ⅝ of an inch thick. These should be of the same length as the sides of the box, so that when placed lengthwise under the box they may project ⅝ of an inch beyond the ends. Nail these strips so that they shall be lengthwise under the bottom, and ⅝ of an inch from the outer part of the sides. The nails may be driven through the bottom down into the strips. Then nail to the box four similar strips, placed vertically, so that their ends shall rest on these projecting pieces, as shown in fig. 1., and strengthen the connection by sheet-iron straps passing around the corners.

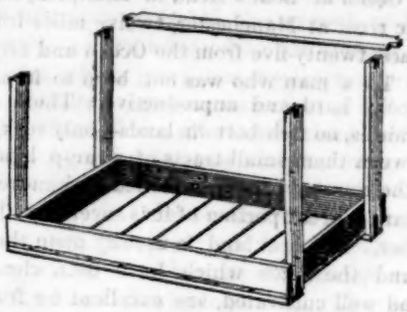


Fig. 3.

Fig. 1.

When the boxes are used, the lower one, fig. 1., is filled with berries; then the next one, fig. 2., is placed upon it, the projections exactly fitting the posts. This is next filled, and so on, successively, till the five drawers are all filled and in their places within the posts.

Fig. 2.

Cut a board for a lid so as to fit accurately inside of these upright posts, which should be just long enough to project slightly above the lid. There should be open mortices or slats in the top of each post, so as to admit two top pieces, fig. 3., made the same size as the bottom pieces already described, and with tenons cut on the ends to fit the slots. When these pieces are put in their places and fastened there by means of iron pins through them, or by means of hinged iron straps running over them and keying closely down, the lid will then be held securely to its place, and the whole set of drawers, with its contents, will be ready for railway conveyance. Additional strips extending across the ends from post to post (which may be nailed outside of them) serve as handles and strengthen the whole.

It will be observed that the case, consisting almost entirely of drawers, is very light. The arrangement of strips around the drawers, securely fastened at the corners, makes the case very strong. Berries can be put into these drawers in bulk, which is probably the best way; or any of the boxes in use can be placed in them. They are very cheap—a good carpenter can make four in a day, complete; the whole cost, made in the best manner, will not exceed $1.50 for a case holding two and a half or three bushels. This, in extensive plantations where a large number are needed, becomes an important item. They are neat in appearance and durable.

[For the Country Gentleman and Cultivator.]

THE WESTFIELD OX AGAIN.

In looking over this evening, a number (March 24, 1864, page 193,) of the Co. GENT., which I had mislaid, I was surprised at the "Cost and Return of the Westfield Fat Ox." In reflecting on the matter, I concluded that in that climate he came to his full *natural* growth between three and four years of age, and calculated the following tables to show two things, which I deem are made self-evident—1st, that beef cattle should be sold during the fall they attain, or winter immediately succeeding their full natural growth; and 2nd, that an extraordinary excessive use of strong food does not give an increase of weight corresponding with the increased cost. Another thing, the total gain during the 18 months he is marked as fed exclusively on pasture, is 710 lbs., at a cost of $37, or about 5¼ cents per lb. Commencing at 1½ years, and taking the next 18 months, during which he was fed on hay and meal, and we have a gain of 685 lbs. for $70, or 10¼ cents per lb. If the hay is good and the stables warm, should the winter keep cost double that of summer?

Years age.	Whole weight, lbs.	Gain weight 6 months, lbs.	Cost of gain.	Cost per 100 lbs. of gain.	Cost to date of whole weight, 100 lbs.
6 months,	550	——	$10	$1.82	$1.82
1 year, ...	820	270	19	7.04	3.50
*1½, ...	1,070	250	10	4.00	3.27
2, ...	1,360	290	20	6.90	3.60
*2½, ...	1,550	190	13	6.84	4.64
3, ...	1,735	185	22	11.90	5.42
*3½, ...	2,005	270	14	5.19	5.34
4, ...	2.215	210	28	13.33	6.14
4½, ...	2,365	150	30	20.00	7.02
5, ...	2,570	205	32	15.60	7.70
5½, ...	2,710	140	35	25.00	8.60
6, ...	2,815	105	41	39.05	9.73
6, 10 mos.,	2,840	25	65	260.00	11.93

It is apparent from the above, that after the ox was taken off pasture at 3½, (he was on pasture only during the six months preceding the ages marked *,) every pound of fat put on him cost more than it would sell for, whilst if he had been sold then, or even at the end of his fourth year, he would have brought a remunerative price. During the period from the time he was 5 until he was killed at 6 years and 10 months, he gained altogether 475 lbs., at a cost of $173, or about 36¼ cents per lb., live weight; and during the last 10 months of his life, (fed on hay and 12 quarts of meal per day,) he gained 25 lbs., at the cost of $65, or just $2.60 per pound. Comment is useless. Justice could not be done to the subject, except by—well old adages though sometimes true, are often grossly impolite. S. S. *Sacramento, Cal.*

FOREIGN CORRESPONDENCE.

How often Can Clover be Raised on the Same Land?

MUNSTER, PRUSSIA, June 10, 1864.

Number 16 of the COUNTRY GENTLEMAN, dated April 21, contains an interesting article, signed F., on the advantages of a clover crop. But though I think Mr. F.'s advice in general very good, I beg leave to add two remarks and to contradict another.

A large part of the beneficial effects of a clover crop is due to the clover shading the ground so densely. We must not neglect the advice of chemistry, but agriculture is more than practical chemistry. And so I say; the manuring effect of a clover crop depends not solely on the chemical constituents of the roots. Put a board down flat anywhere in your field for some months in the summer. You can tell the spot next year in your crop. The mulching by the board is equal to a manuring. The same, if you place a pile of straw on the field and remove it clean after some months; though no leaching has taken place, the mulched spot is highly benefitted. Thus all shading crops are beneficial. For instance, I have harvested a poor crop of wheat; the wheat was thin, owing to unfavorable weather, though on rich ground. You may be sure that the next crop will then be much poorer than it would have been after a good crop of wheat. Chemistry would declare this a mistake, for a good crop would have exhausted the land of more phosphoric acid, alkali, etc., but experience is stubborn, and the fact is, *a good crop always leaves a better chance for the next crop than a poor one.* The main reason—though not the only one—is, that a good crop shades the ground better. Now, if we want a full effect from our clover crop, we must *plow up the sod immediately behind the scythe.* Do not let the stubble be exposed to the sun a single day. I run the plow through between the cocks. The texture of the surface is changed for worse very quick after being mowed.

From the same reason clover must be good to do good. It will not do to first exhaust the land by grain crops and then try to renovate it by clover. Clover is a greedy feeder itself, but it pays big interest; sow it on land that would also raise good wheat. Your capital is not lost. You get a better crop of wheat thereafter, still retaining more.

But now I must contradict Mr. F. Your correspondent wants to seed to clover as often as possible; he even advises to do so twice in a six years' rotation. Mr. F. will excuse me for not approving of this counsel. If it can be done, if the land will bear it, why I then should fully agree and highly congratulate Mr. F. on owning such land; but in all Germany we have *no land that will bear it.* We have land that will yield 36 to 40 American bushels of wheat, 80 to 90 bushels of oats and four tons of clover-hay on an American acre; but even on *our best land we can raise clover only once in six years.* We have tried to raise it oftener; it can be done for a number of times; we have raised it six times in 20 years; but after 24 or 30 years we made a sad experience. No manuring could restore what we had wasted. So it is a general rule among all our practical farmers to raise but one crop of clover on our best land in a six years rotation; on inferior land but once in nine years. But it will do well to raise one crop of red clover and another one of white clover in one rotation, the red and white clover not interfering with each other. I must close here, but will add that *flax* also cannot be raised oftener than once in a rotation L.

LETTER FROM THE HOMESTEAD.

CHESTER, N. H., July 4, 1864.

MESSRS. EDITORS—My way of celebrating Independence to day has been, to rise at four in the morning and work in the garden until eleven, during which time I flatter myself that I performed a good honest day's work among the early corn and potatoes, tomatoes and other "garden *sarce.*" I maintain that a man who has been away from the home where he was born, a quarter of a century, and still has the old homestead to go back to, and work upon and find the ancient landmarks unmoved, has something to be thankful for. There is no home like that into which one is born, and we become more sure of this the longer we live; and if you chance to be one of eleven children, raised on the same farm, there will never be to you another such place, go where you will. There may be people among your readers who do not even know where Chester, N. H., is, and as my agricultural observations will have no value, without latitude or longitude, it may be well to say that this good old town is on the height of land between the Atlantic Ocean at Boar's Head in Hampton, and the Merrimac river at Manchester, twelve miles from the latter place, twenty-five from the Ocean and fifty from Boston. To a man who was not born to it, all this region looks hard and unproductive. There are no broad prairies, no rich bottom lands—only rocky hills, and between them small tracts of swamp land. Although the country has been settled a hundred and thirty years, a great portion of it is covered with wood and timber. The best land is usually upon the high swells, and the fields which have been cleared of stones and well cultivated, are excellent for fruit and hay, yet still require hard work for any cultivated crop. Fields that have been under the plow for a hundred years continue to furnish a good crop of stones at each new plowing, and if you presume to set your plow two inches deeper than your father set his, a double crop of stones and labor is your sure reward. Yet this is a county blessed, in all that makes life desirable, far above the average of even our own favored nation, infinitely above England or France, usually esteemed the foremost nations of the world. Here are illustrated what we profess to prize as above all price, the republican ideas of independence and equality. Education and property are fairly distributed, and if none are very rich, none are in want of the comforts of life. I to-day heard a well informed citizen remark that even now, in the midst of war, it would be difficult for a person inclined to be charitable to find in this town a person who is fairly an object of charity. A half dozen insane, or idiotic, or foreign paupers, are supported on what we call a "poor farm," and the rest of the population are able to take care of themselves.

A stranger here always inquires, how do the people live? What do they raise?

We may answer the last question by saying they raise *men.* This little town, of about 1,300 people

which cast just 278 votes for Governor in 1863, has sent as soldiers to the war, 130 men, and is now two ahead of all the calls upon it. Two citizens or natives of Chester have been Governors of the State; two Chief Justices; two Senators in Congress; one Attorney General, and so on through a long list, showing, perhaps, that our boasted equality gives this deserving town somewhat more than a mathematical proportion of the honors.

How the people live in these small New-England towns is no easy question to answer. Indeed, it cannot be answered, except in detail. In general, they do not live by farming; they do not live by manufacturing; they do not live on the interest of their money for they have none; yet they live, and live well and happily and independently. If we look at an individual we know how he and his family are supported, for here in the country we know all our neighbors' affairs. Here is what we call a farmer: He has one or two hundred acres of land, most of it wood-land and rough pasture. He keeps perhaps twenty head of cattle, one horse, a few sheep, three or four swine and some poultry. He labors daily with his hands, performing most of the hard work on his farm, plowing with oxen, his boys helping him when necessary. He plants say three or four acres of corn and potatoes, sows as many with oats, or rye, or barley; raises all his vegetables, pork, butter and corn, and sells a little, but not much of each. The growth of his stock is worth one or two hundred dollars a year. He has an orchard which gives him apples worth as much more. He cuts every year some timber and wood for market. His children all attend school half or two-thirds the year, for education is what everybody prizes as the road to respectability, if not to fortune. The wife works, but she does not like to see her daughters work, but prefers to have them attend school and to learn music. The daughters do not go out to service; they regard that as degrading. They sometimes go into the mills at Manchester, where they are well paid and live respectably, and save money, if they have a mind so to do. Or they become teachers, for somehow New-England girls take a much finer polish than the boys, and all the country knows that if female teachers are wanted, New-England girls best supply the want. The boys "work out" when they are eighteen or twenty, having no such pride about service as the girls have, and either earn money with which to go to college or buy land at the West. The father and mother stick by the old farm, neither poor nor rich, usually comforted by seeing their children prosperous, though usually not more than one son remains with them, and so the generations go. When the farmer dies, he leaves to the son who has remained at home, but little except the farm, but his life has been well spent, his family well cared for through a good education, and nobody suffers because his estate is small.

When some one told Sheridan of a friend who had recently died worth £100,000, he replied with some point, "A snug little sum to begin the next world with." On the whole, is not this quiet stay at home-life of a New-Hampshire farmer, as profitable to himself and the country as a raid into California for gold, or a chance for the chills and fever in the west? New England people believe that meeting-houses and school-houses are the necessaries of life, and a good education the best inheritance.

This is a great country for apples, and although the climate is severe, the Baldwin thrives wonderfully on these hill-sides, and peaches have usually flourished better on the hills than on more level lands in a warmer climate. The frost holds off two or three weeks later on the hills than on the plains, so that the Isabella grape in a majority of seasons will ripen tolerably well in the open air.

I have alluded to manufacturing as a source of profit. Although there is no water power nearer than Manchester of any account, there is always some branch of home industry which helps the females of the family to supply their own wants.

For many years all the women in the neighborhood were engaged in making palm leaf hats, taking the raw material of the traders, who paid them in goods or money for their labor, which they performed at home. Now the same material in the nicer form is manufactured into the kind of hats known as Bogota, which most of your readers vainly imagine to be imported from some unknown country. I have one for which I last year paid 50 cents in this village, very much like yours, Messrs. Editors, for which you paid six times as much. Of late the manufacture of shoes has to some extent afforded employment to persons of both sexes.

One fact I wish to state for the benefit of any indolent person who has land like this on the old homestead, which he wants to have take care of itself. I have had charge of the farm about twenty-five years, and there are two small fields containing together about seven acres of land, which have been mowed every year during all that time without being plowed, except one acre, and without manure. The average crop has been about one ton to the acre, and the average value of the grass standing has been about $8 per ton. I have sold it every year, and have been patiently waiting to see how long it would continue to produce this crop. The land is never fed, and my conclusion is that it will always produce this amount. It is high, hard land, and as it is sure property, I think it may be valued financially, at our New-Hampshire rate of 6 per cent. interest, worth $133 per acre. Under a rotation of corn, potatoes and wheat or barley, one year each, we used to cut more than two tons of hay to the acre for four or five following years. My opinion from long observation on this kind of land, is that it is a great mistake to feed off the second crop. Although the surface is solid so that cattle may not injure it much by treading, they pull up the herds grass, or bite it so low that it dies. On my soft reclaimed meadows I no more think of turning heavy cattle, than I do into my parlor or garden.

There are a good many pleasant objects in this old town, especially to those of us who passed our youth here. The rock maples, which we carried on our shoulders and planted, are higher than the house now, and overshadow the road, and are living monuments of many who aided in the work and have slept their last sleep. Strangers, seeking green and pleasant retreats from the din and heat of the cities, are finding their way hither. Thank Heaven, who made the hills so high, no railroad can get within six miles of us, so that nobody is likely to come here who does not appreciate the beauty of the place, and for those who do there will be welcome.

Perhaps, my friends, this letter may not seem worthy a place in your paper, but I assure you it is a rare thing for people so far off as New-York, to get a peep inside one of these New-England villages, and if you have not obtained a definite idea of how we live here, it is partly at least the fault of your understanding.

Truly yours, H. F. FRENCH.

Average Yield per Acre in Bushels and Pounds.

STATE.	Indian corn, bushels.	Wheat, bushels.	Rye, bush.	Oats, bush.	Barley, bushels.	Buckwheat, bushels.	Hay, pounds.	Potatoes, bushels.	Turnips, bushels.	Ruta-bagas, bushels.	Mangolds, bushels.	Carrots, bushels.	Onions, bushels.	Beans, bushels.	Peas, bush.	Sweet Potatoes, bush.
California,	28	24¼	20	28¼	23¾	20	2,440	62½	....	....	....	....	169	28	17	142
Connecticut,	32	17	14	33	25	16	2,100	108	282	426	675	456	324	23	37	.....
Delaware,	20	15	18	25	25	30	3,500	112	300	400	500	200	100	...	....	137
Illinois,	40	14	20	20	38	23	3,400	100	178	279	290	375	159	24	38	164
Indiana,	42	16	20	15	29	25	3,479	112	172	261	275	200	207	33	44	114
Iowa,	38	14	23	39	29	29	4,000	144	198	252	350	397	186	25	28	131
Kansas,	40	21	28	33	27	30	3,400	108	268	282	160	260	186	33	31	136
Maine,	34	16	18	36	29	28	2,322	153	565	553	628	498	155	18	26	.....
Maryland,	28	14	16	26	32	29	3,000	99	219	220	....	....	126	24	15	108
Michigan,	41	18	18	26	28	23	3,000	134	292	395	462	383	315	26	25	107
Minnesota,	45	20	24	43	34	26	4,000	175	400	400	478	565	340	28	31	150
Massachusetts,	37	17	15	35	26	21	2,300	118	267	490	748	867	320	19	20	.....
Missouri,	38	17	17	28	27	25	3,000	89	172	....	....	....	125	25	....	106
New-Hampshire,	38	15	18	34	26	20	2,300	109	300	606	475	477	250	15	19	.....
New-Jersey,	37	19	18	33	25	23	2,500	100	192	308	375	325	156	21	15	95
New-York,	35	18	19	35	29	22	2,800	125	290	430	500	507	375	24	24	.....
Ohio,	33	16	16	15	25	23	3,000	80	204	487	612	405	280	26	20	95
Rhode Island,	37	20	21	45	30	17	2,375	124	266	425	325	315	350	15	20	.....
Pennsylvania,	36	18	18	37	29	24	3,200	114	180	459	450	400	179	23	20	122
Vermont,	35	16	15	38	24	27	2,200	125	281	464	539	266	....	22	23	.....
Wisconsin,	40	17	18	42	33	26	2,950	151	291	354	533	575	292	27	30	60
Largest yield,	45	24¼	28	45	37	30	4,000	175	565	606	748	867	375	33	44	156
Smallest,	20	14	14	15	23¾	16	2,100	62½	172	220	160	200	100	15	15	60
Average yield of all States, in even bush.	35	17	18	31	28	24	2,817	116	270	394	471	415	229	24	26	116
Highest price per bush,	$1.10	$1.61	$1.87	$1.00	$1.20	$1.14	pr ton $16.00	$0.63	$0.30	$0.30	$0.24	$0.33	$3.00	$2.55	$2.00	$2.50
Lowest per bushel,	.23	.56	.40	.22	.49	.37	6.00	.25	.12	.13	.15	.15	.49	1.01	.78	.50
Average price for all the States,	.61	1.11	.72	.39	.79	.59	10.00	.43	.19	.21	.23	.24	.68	1.64	1.15	.97

YIELD OF CROPS PER ACRE.

MESSRS. EDITORS—The operations of the Department of Agriculture seem to be but imperfectly understood by many of the farmers of the country, and the large amount of valuable information which it may be the means of diffusing among the people of the different States, is by no means yet fully appreciated. That mistakes will be made in the management of the business of the Department, is to be expected: neither is it to be supposed that the officers connected with it will always pursue such a course of policy as might be considered the most judicious; yet I think any one familiar with the operations of the Department since its commencement, will be satisfied that it has accomplished some good, and that much more will be done. Of the value of the monthly and bi-monthly reports of the condition of the crops of the country, I shall not at the present time stop to discuss. After carefully reviewing the first Annual Report of the Department, that part of it relating to the Agricultural Statistics of the States, appears to me to be one of the most interesting and valuable, and thinking that the information contained in these statistics might be as interesting and valuable to many of the readers of the Co. GENT., who have not access to this report, I have condensed the foregoing table from them, though much that is valuable has necessarily been left out, the table containing only the yield of the principal crops in the States mentioned, and the prices at which they were estimated to be worth at the time these statistics were collected.

C. T. ALVORD.

GARDEN OF L. B. GAVIT, LYONS, N. Y.

An intelligent friend, to whom we are indebted for many favors, has furnished us the following:

I recently spent a short time in Lyons, in Wayne Co., N. Y., and among other objects of interest visited the well kept grounds of L. B. Gavit of that place—a brief description of which will be interesting to the readers of the Co. GENT., as showing how much may be done by a person interested in the cultivation of a garden, who is closely occupied during the day in an extensive business.

Mr. Gavit moved upon his present place about ten years ago, and nearly everything has been placed upon it since by him.

His grounds consist of about an acre, all in the highest state of cultivation—mostly occupied by trees, berries, shrubbery, and flowers. He cultivates about two hundred varieties of annuals, raised in a hot-bed and transplanted into the grounds, and which in the early part of June were remarkably stocky and large. Indeed, in every thing he seems particularly "*lucky.*" His roses, of which he has a very large quantity, are almost entirely free from slugs or aphis. He throws upon their foliage, from a hydropult, a solution of whale oil soap and water. He finds the hydropult a very good arrangement for this purpose, as he can insert it under the foliage, and so effectually drive off the vermin with which they are infested. His currants and gooseberries are kept free from the worm, which is so destructive almost every where else, by the use of fresh slacked lime dusted upon their foliage.

Upon neat trellis and stakes are nearly all the new and valuable grapes, most of them in fine bearing condition—all judiciously pruned.

I was much struck by the appearance of two specimens of English Ivy growing in front of his house, and winding around in a huge wreath tree the columns of his veranda, and coming together at the top in the form of an arbor. A remarkably fine Aristolochia or Dutchman's pipe, shades a veranda extending across the end of his house, and is growing upon wires to the very top of the house. I never have seen so fine a specimen. This, with the Ivy, prairie roses, grape-vines, raspberries, &c., he always lays down and very slightly covers in the fall—so in spring they look fresh, and are sound their whole length.

NANKIN SHEEP.

EDS. CO. GENT.—During 1862 and 1863 several articles having been published in your journal, giving a partial history of the characteristics of the Nankin sheep, followed by an advertisement of them for sale, over the signature of a very distinguished agriculturist, I was induced to inquire more fully by letter, so that, if favorable, I might try an experiment in crossing with our common varieties of sheep, with a view to raise early lambs for the spring market.

As I consider it a duty for any farmer that has been successful in an experiment to give it to his associates, so, on the contrary, when we are unsuccessful, should we be the more certain to show wherein the failure lies, to prevent others following in the same path.

Upon the faith of descriptions I received of the stock by the advertiser, I ordered a buck and two ewes in May, 1863, which arrived in June.

The ewes were ordered by first shipment and were described: "The lamb six months old, the ewe one year." Those I received were one ewe with teeth, representing a yearling mouth, weighing 70 lbs., and to all appearances over one year old, the other supposed to be the "ewe one year," after which is added, "she having had four lambs at 8½ months old;" she weighed 82 lbs., but was very thin, and showed signs of having been suckled; her teeth showed over two years old.

The buck arrived in June, and was described as one that would "weigh 200 lbs. dressed" He had a full mouth and in poor condition weighed 140 lbs.

The claims for them by letter seemed to be unreasonable; still there is something fascinating in any novelty that will change the regular order of nature as we see it; so with the Nankins, as per letters in my possession. "One pair is enough for one county, with two ewes in 4½ months." *After the first lambing*, "the buck lambs will cross the mothers and progeny." "They should be sheared twice each year in your state, and will cut 10 lbs. at a shearing, worth in New-York 40 cents per pound. They will not jump fences, not even a board 12 inches wide on edge. They take the buck at 4½ months old. They drop their lambs in snow banks with perfect impunity, being far more hardy than the native sheep. The ewes are ready for the buck two days after the lambs are dropped. Owing to their potency, the bucks get two, three and four lambs when bred to any other kind of sheep. I have a ewe that has had 16 lambs in 16 months. I forward you two ewes in lamb, and you will probably have ten lambs and two or three bucks in 4½ months to cross the mothers and progeny."

The above are a few choice extracts, and I propose to give the result of one year's experimenting with them. First as to the wool, as I have two clips; that which was on them upon arrival weighed 8½ lbs. in the aggregate for the three fleeces without washing, and the present clip, a very little less than one year's growth, weighed in the dirt 9½ lbs. The wool in both cases is quite clean for unwashed, and has but very little oily matter in it. As to jumping, with me for some months after arrival, the three were penned in a shed where a cross timber extended across sufficiently high for them to pass under without hindrance; this the buck invariably went over, though three feet high, if at all excited by the presence of strangers, and though great pains were taken to quiet them, they showed more than usual timidity. My ewes have bred but once each, the older on Jan. 25th, and the other on March 20th,—each bearing *two lambs*,—and I have seen no signs of there being another set coming before the usual time. The lambs when dropped were very small, and coming in good weather, I cannot vouch for the full-bloods lacking in hardiness.

Now for the experiment in crossing. I selected 30 ewes, embracing as extended a variety as I could procure, and gave them to the buck early in August. The lambs commenced to drop in the very severe weather in January, the first sixteen lambs having died before one succeeded in proving hardy enough, though all were kept in a stable enclosed with upright siding. There were only six pair of twin lambs from 28 ewes, the same ewes having yielded a greater proportion of duplicates the previous season. Lambs which dropped later and in good weather, succeeded very well, and grew very rapidly, attaining a weight of 45 lbs. dressed at three and a half months old from native ewes, fed with clover hay and a pound of mill-feed each, daily until grass started, when they were turned out, and only sheltered and fed the mill-feed at night. Common coarse sheep of this country have proved with me the best cross. Though the *full bred* sheep sent me fall so very far short of all that is claimed for them, yet I do not despair in the result of a success in my undertaking in raising early lambs for marketing in May and June. J. T. WARDER.

Springfield, Ohio.

MORE ABOUT SALTING HAY

EDS. CO. GENT.—"Error of opinion may be tolerated," so says Thomas Jefferson, "where the truth is left free to combat it."

Where an error emanates from high authority, much evil may take place before it can be corrected. On the subject of salting hay, my testimony will be found in the opposite direction from the writer who speaks of "A Bombshell among Farmers."

The hay harvest of 1862 was very wet, and it was with much difficulty that hay could be saved in but moderate condition. Out of some fifty tons which I cut that season, I am satisfied that I did not save ten without being more or less injured by the frequent rains. With a view of improving the injured condition of the hay, I made an application of about one peck of salt to each ton of hay, being about the amount required by stock in the consumption of that amount of hay.

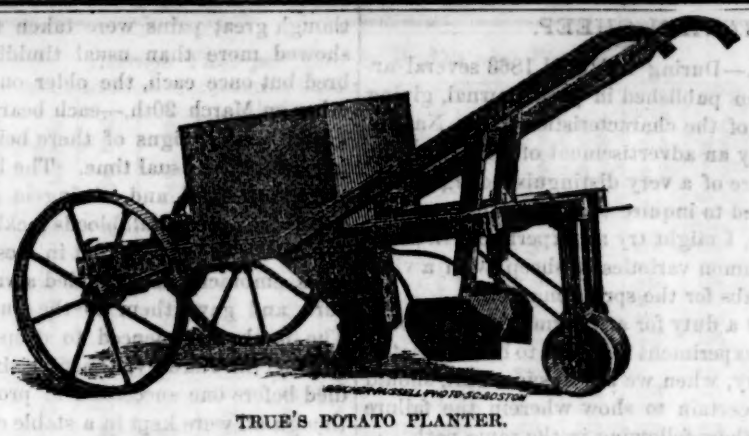
The result was as I supposed it would be, the stock ate the hay which was injured, to the last spire, even better than what they ate the preceding year in which the hay was saved without being injured in the least.

The reason assigned for not using salt is the dampness it causes in the hay. Is it reasonable to suppose that one peck of salt, evenly spread over one ton of hay, could produce any injurious effect?

I was not raised a farmer, yet I have practically been one for fifty-one years; hence the above remarks are not predicated on one year's experience.

Elm Grove, Ohio Co., West Va. N. P. ATKINSON.

Queens County.—The Agricultural Society of this county have decided to hold their next show at Jamaica, Oct. 5, 6.



TRUE'S POTATO PLANTER.

TRUE'S POTATO PLANTER.

MESSRS. TUCKER—As your excellent periodicals are ever open for the purpose of introducing new tools and farm implements that are really useful and meritorious, allow me to introduce to the readers of THE CULTIVATOR and COUNTRY GENTLEMAN, Mr. J. L. True's Potato Planter, of Garland, Me.

I have just been superintending a trial of a working model of this machine, and it affords me pleasure to state that it performs the labor of making its own mark, or furrow, for receiving the potatoes; cutting them; dropping them; covering them, and rolling them, all at one operation, in a very excellent and farmer-like manner.

The accompanying illustration will furnish a very correct idea of this implement. One horse will work it with great ease. Two drive wheels in front support the machine and work the cutting and dropping apparatus, and cause the implement to run very steadily. Any boy who is strong enough to handle a cultivator, can work this implement without any difficulty.

The potatoes are put into the hopper, and enough for a hill is cut and dropped with great accuracy, and covered as well as the labor could be done by hand, and as fast as a horse can walk.

In addition to these things, the machine is very neatly and substantially made, and must prove a very great labor-saving implement in those localities where large crops of potatoes are raised either for market or for home consumption.

Mr. True is a practical farmer of Maine, and has experimented for several past years in bringing this implement to its present state of perfectibility.

Auburn, N. Y. S. EDWARDS TODD.

SCREENS FOR SHELTER.

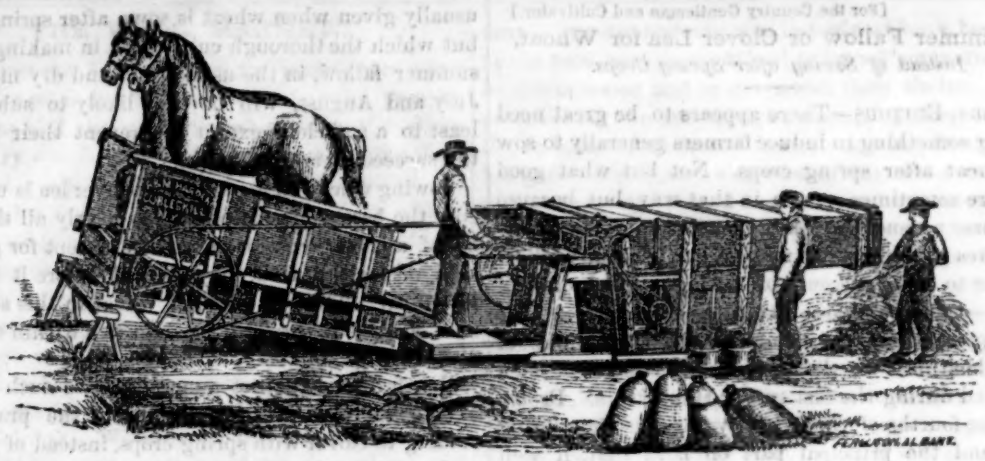
Every year adds to the proofs of the value and importance of belts or screens of trees as shelter from severe winds to growing plants. An acquaintance in New-Jersey recently showed us several accidental belts which had grown up from nursery plantations. They were placed on different parts of his farm, and in every instance the shelter they had afforded to adjoining crops, whether of grain or hay, averaged about 50 per cent. additional to the same crops when exposed to the sweep of winds. This advantageous result extended to many rods from the screens, and then gradually lessened, as the distance increased. These screens were mostly some 8 or 9 years of age, and averaged about 20 feet high. By selecting valuable timber trees these belts may be made a source of double profit, as they may be thinned out, and the timber used as the trees extend in breadth and height. Evergreens have a great advantage over deciduous trees by the complete barrier which they afford against the winds of winter when most needed. The white willow at the west has been made to form high screens by quick growth, and if the belts are several trees in breadth, they will make a good shelter. Evergreens, however, have the advantage of not sprouting up or suckering, and they do not commonly injure or exhaust the the adjacent strip of land so much as deciduous trees.

In riding through the different parts of the country the fields of winter grain afford to the observing eye many examples of the value of shelter. On the lee-side of woods or trees, or of hills or ridges of land, the crops have, in most instances, been slightly injured; while fields exposed to the full sweep of the winter blast have suffered severely. It is true that a thin top-dressing of straw or coarse manure in the few cases where applied, have proved a valuable protection. But a more general and continued shelter would be afforded by belts of trees, and we invite the continued attention of land-owners to the subject.

We may add that the Norway Spruce usually grows at least three feet annually when cultivated, and two feet on good land when rot. Consequently, allowing 2 years for young 2 feet trees to get well under way, 8 years will give a good 20 feet screen when cultivated, and 12 years without such treatment—the distance asunder being some 6 or 8 feet.

ALDEN'S WHIFFLETREES.

These whiffletrees, figured and described on page 366 of the COUNTRY GENTLEMAN, are a very good thing. I had used similar ones in principle for nursery and orchard culture for many years. I make the single ones as short as the free action of the animal's legs will allow, (about 14 in.) but instead of attaching traces to nooks on the rear side of the whiffletrees, as represented in the cut alluded to, I have an iron strap riveted there, which bends around the end of the wood, and turns in, forming a hook inside. Although this may not be quite as perfect, it answers a good purpose, and if carefully made, will never tear the bark. X.



HARDERS' THRASHING MACHINERY.

Above we present a cut of the Threshing Machinery now manufactured by Messrs. R. & M. HARDER of Cobleskill, embracing some important improvements since we published a former engraving two or three years ago. In the Horse Power, it is claimed that by certain modifications in the friction wheels, the arrangement of the flooring, and the chains and reels on which it runs, and in other minor points, the loss of power is less and the consequent ease to the team greater, than has been before attained on the railway or endless-chain system. The Thresher and Cleaner provides abundant space for the thorough separation of the straw from the grain, carrying off the former freely, while the latter is completely shaken out upon the inclined plane which carries it into the fan. The cylinder has sufficient weight to retain its momentum and run evenly; and the spikes upon it when broken short off can be readily driven out and replaced. In the cleaning apparatus, the seives are 31 inches wide and five in number, adapted to the different kinds of grain, with a side shake (the same as a fanning-mill) about one-third slower than the revolutions of the fan, which enables it to clean better than those with a backward and forward motion, and better than a fanning-mill with smaller sieves. These and other points which the manufacturers have developed in a long experience at their business, are more fully explained in the circulars which they supply on application. They send us copies of various testimonials from those who have had these machines in use, which speak most highly of their workmanship and efficiency, and we do not hesitate to commend them to our readers.

BALTIMORE ORIOLE---*Icterus baltimore.* DAUDIN.

The Baltimore Oriole is one of the handsomest of our summer visitors. It arrives in the eastern portion of Pennsylvania about the beginning of May, and departs from thence about the end of August or the beginning of September.

In point of artistic nest building, the Baltimore Oriole stands unrivalled. If a nest of this bird were shown to a person for the first time, and they were told it was made by a bird, it is very probable that they would not believe it.

The Baltimore Orioles are already mated when they arrive in the eastern part of Pennsylvania. Therefore, shortly after their arrival the happy pair may be seen searching for some suitable spot for their nest. This is generally upon some high bending branch of a willow or some other drooping tree. They begin by fixing to the branch from which the nest is to be suspended, strong strings of hemp or flax, or indeed any other kind of string or thread which they can pick up. These strings are the same distance apart as the nest is intended to be. They now proceed to interweave materials of the same character, as well as any loose tow, cloth or rags that they can come across. They weave these into something of the shape of a cylinder, finishing off the bottom in the same manner. In the Southern States the nest is composed of moss known there by the name of "Spanish moss," or "Spanish beard," from the supposed resemblance to a man's beard. To the North, however, this bird lines its nest with much warmer materials, and it is such a nest as this that we have described. On an average the nest measures about five inches in diameter, by six or seven in length. The eggs are five, of whitish-flesh color, and are spotted and streaked with lines of purple, varying much as to the shade. They measure on an average seven and a half eighths in length by five and three-fourths in breadth. They vary considerably as to size. We have seen eggs of the Baltimore Oriole much more elongated and not near so broad as the measurements given above.

It is several years before these birds receive their full plumage. Occasionally a male bird may be found whose whole tail is yellow; sometimes the two middle feathers only are black, and frequently black on the back is skirted with orange, and the tail tipped with the same color.

J. P. NORRIS.

Philadelphia, Pa., July, 1864.

[For the Country Gentleman and Cultivator.]

A Summer Fallow or Clover Lea for Wheat,

Instead of Sowing after Spring Crops.

MESSRS. EDITORS—There appears to be great need of doing something to induce farmers generally to sow less wheat after spring crops. Not but what good crops are sometimes grown in that way, but because the course pursued by a large portion of wheat growers makes it necessary to make a good summer fallow in order to be at all sure of raising a good crop of wheat—say of from 25 to 30 bushels to the acre. This necessity is very strongly shown by the large amount of poor wheat now on the ground, and that has been harvested during the last two or three years. Probably three fourths of this wheat was sown after spring crops, and the principal part on land that, if well summer fallowed, or sown on a good clover lea, would have given a good crop. But, by being put in rather hurriedly and late, as it almost always has to be when sown after spring crops, and, as is more especially the case now, when labor is scarce and high, wheat does not generally get a sufficiently strong and vigorous start in the fall, to enable it to withstand all of the vicissitudes of a bad winter and spring, and bring it forward sufficiently early to escape the midge and rust. Not but good crops of wheat can be grown after spring crops, and be made very profitable if sown on land sufficiently dry and rich, but because the principal part of the land thus sown is lacking in one or both of these important requisites. Consequently, while I do not wish to stop all farmers from sowing wheat after spring crops, for there is some very good wheat grown in this way, I would only have it sown where the land is sure to produce good crops; and I would be very glad to see all of our wheat land put in a condition to produce heavy crops without summer fallowing. But we have to deal with circumstances as they actually exist, not as we would have them.

Now the real practical point for the farmer to consider, and that should control his decisions in regard to what crops to raise, is, that wheat has a good many enemies and adverse circumstances to overcome, to generally produce good crops, and these can only be overcome and guarded against by a good strong growth in the fall; and that the principal part of our wheat lands are not in a condition to give wheat such a start when sown after spring crops, though a good summer fallow, or a clean one, or two-year old clover lea, would give a heavy crop. And, though it may seem like lost time to keep land in an unproductive state, while making a summer-fallow, yet there are many reasons why a heavy crop on a summer fallow is better and more profitable than a light crop, or partial failures after spring crops. Prominent among these is the fact that, in sowing after spring crops, the land has to be prepared twice in the same season, seed found for both the spring and fall crops, and the ground harvested over twice, while both crops may not be as valuable as one heavy crop of wheat, that may be grown on a summer fallow in the same time. Another advantage is, that a summer fallow gives a good chance to clean land that is foul. There are many pests to grain crops, like wire grass (Poa compressa) quack grass (Triticum repens) and Canada thistles, that seem to grow all the better for the cultivation usually given when wheat is sown after spring crops; but which the thorough cultivation in making a good summer fallow, in the usually hot and dry months of July and August, will be very likely to subdue—at least to a sufficient extent to prevent their injuring the succeeding crop of wheat.

Sowing wheat on a good clean clover lea is undoubtedly the best course to pursue, as nearly all the benefits of a clover crop for the season, except for growing seed, or for fall feed, may be had before it is taken for wheat. The best piece of wheat in this section is on a clover sod turned over and sown within ten days after plowing.

But farmers will not generally have such a clover sod to spare, until they come into the practice of seeding to clover with spring crops, instead of plowing under the stuble and sowing wheat; and though there may be more or less objection to laying out of the use of the land to make a summer fallow, yet it will be much the best way to raise wheat until the course of farming is changed, so as to sow on a clover lea. Hence the sooner those that have been in the practice of raising light crops of wheat after spring crops, will seed to clover with the spring grain, and by sowing plaster if necessary, get a good clover sod of one or two years growth to turn under, the sooner will they be able to raise good paying crops of wheat without summer fallowing. But until the practice of seeding to clover with spring crops is adopted, the best, and in most cases, the only way to be at all sure of raising good heavy crops of wheat, must be a good summer fallow; for it cannot be too strongly impressed on farmers, that to be at all sure of raising good wheat, the land must be in a condition to give it a good, strong, vigorous start in the fall, which none but the very best land, when partially exhausted by a very recently harvested crop of grain, will be in a condition to do. While a rather moderate or feeble growth of wheat, if it survives the winter and spring, will be so late in fairly getting to growing, that it will be very liable to be injured by rust or the midge, or perhaps nearly destroyed by both of these pests together.

And here let me state that "Mr. Geddes' theory that wheat that is strong on the 1st of May is nearly safe from rust or insects," &c., (CO. GENT., page 304,) is undoubtedly correct; for I believe it is the general experience of wheat growers in this section, that there is very little early wheat that comes through the winter and the usual season of freezing and thawing in the spring, in good condition, and on the commencement of seasonable weather starts with a strong, vigorous growth, that is ever injured by rust or the midge. Of course some of the later varieties of white wheat may be injured, perhaps destroyed on some soils, by the midge, however well grown. F.

Orleans Co., N. Y., 1864.

Draining.—The Canada Farmer well remarks that in such a spring as this the benefit of draining the land is most striking: "We saw two large fields adjoining each other yesterday, of precisely similar soil; one thoroughly drained and the other not; the drained field was quite firm and dry, and the crop, (peas) peeping promisingly through the ground; while the other is full of water holes, and will require at least a week's fine weather before a team can be taken on it. The difference in the temperature of these two otherwise similar soils six inches from the surface, was found by careful experiment to be more than seven degrees!"

THE WOOL MARKET.

There has not been a season for many years when the call for wool has been so earnest as the present. Before one-half the wool was taken from the sheep the country was flooded with purchasers driving their long-tailed steeds at 2:40 rates in eager pursuit of the fleece. Sales opened at 80 cents a pound, at which, perhaps, one-fourth of the crop was disposed of. It soon, however, run up to 90 and 95 cents. Bought principally by speculators—to hold until prices advance as they ultimately must.

Although wool has advanced considerably from old prices, it has not been in proportion with other things, and of course the advance does not yet give the farmer his rightful due. We recollect the time, and it is but a few years since, when we could get *six* yards of *good* cotton sheeting for the price of a pound of wool. Now, the good sheeting, compared with that of those days, is not to be had. And for the flimsy stuff in market, we can not get a yard and a half of the best for a pound of wool. Then cotton is going up from present high prices, and wool will be sought to fill its place. Of course wool *must rise*. There are other causes why wool must advance which we have not time to speak of now. We choose to hold on upon our wool, and if it will not run up in proportion with what we have to buy, get it manufactured and wear it out *

July 6, 1864.

CARE OF EWES---RAISING LAMBS.

MESSRS. EDITORS—It is characteristic of certain persons to present only the bright side of a picture, regardless of how gloomy an aspect the opposite side may assume. I find this a characteristic peculiar to a certain class of people called farmers. This habit of looking only upon the bright side of objects, may be well enough to excite the imagination, and present to our minds pictures of mere fancy or idle speculation, but to view a subject in a pecuniary light we must investigate both sides of the question, and be willing to know the worst, and prepare for it. Farmers are apt, if they meet with success in any enterprise in which they may engage, to inform their neighbors and friends of the means employed in bringing their enterprise to a successful issue. But should they chance to fail in any undertaking, they are careful to make no mention of the fact, although they are capable of imparting useful information, experimentally obtained, to those who are about to engage in a like enterprise. Thus we see that others are obliged to pass through the severe school of experience, and perhaps meet with reverses which might have been avoided, had others been as willing to make known the incidents connected with their reverses as they were of their successes. We have generally been blessed with what is termed by some "good luck," in rearing lambs heretofore, but owing to a change in the management of our breeding ewes, we have met with a change in luck, which I will endeavor to make public for the benefit of those who may be interested in viewing the dark side of a picture, that they might be benefitted pecuniarily.

We have always given our sheep good shelter in winter, and kept them confined to a certain extent, but never so closely as during the past winter. Previous to this spring we have raised full 95 per cent. of all the lambs dropped, and in one instance 100 per cent. The ewes previous to last winter have been fed in the yard, and were obliged to travel some distance to obtain water and to get under their shelter. But entertaining the prevailing opinion, that sheep would thrive better if sheltered from storms in winter, and fed under cover, and also would bear closer confinement, we erected a barn last summer large enough to accommodate 100 sheep. During the past winter, therefore, we have for the first time, been experimenting in confining our ewes more closely than usual, and the experiment has brought about any other than satisfactory results. Our lambs have been dropped in numerous instances but partially developed; some, however, seem strong, and will live to be 2 or 3 days old, when they suddenly manifest indisposition, and in the course of an hour be dead. Others will be unable to rise, and all efforts to induce them to extract the lacteal secretion from the udder of their dams proves ineffectual, and finally they die, exhibiting little or no symptoms of pain. Sheep during pregnancy, when in their natural or wild state, enjoy the same liberty as at other times, and the exercise they receive is sufficient for the proper development of the fœtus, But with domestic sheep the only time of confinement is during pregnancy; thus we pervert one of nature's laws by closely confining the ewe, and deprive her of the requisite amount of exercise for the proper development of the fœtus, and mortality among the lambs is produced.

I am unable to account for the diversity of opinion exisiting in regard to the best time for lambs to be dropped. Some argue that they should be dropped prior to the time the ewes are turned out to grass, and in fact no matter how early—and advance, as seems to them, cogent reasons to sustain the novelty of their position. Others approve of having the ewes turned out to grass before the lambs are dropped; and this latter method seems to me to be the proper one for this latitude, for experience, dearly purchased, teaches me that to have lambs dropped in winter and early spring, is about equivalent to having them dropped in a barrel of water when the thermometer indicates 20° below zero. The supply of milk at this early season, when the ewes are deprived of succulent food, is inadequate to meet the demand of the lamb, and consequently we see anything but a nice thrifty lamb reared from the ewe, no matter how well she may be cared for. One argument in favor of early lambs is, they will be larger and be better prepared to endure the rigor of our northern winters; another is, they will shear more the next season. Some may have better luck in raising winter lambs than I do, but my lambs dropped in April are generally equal to if not superior in size to those dropped in early winter, and have as large a growth when winter commences.

If these early lambs shear more than spring lambs it is no gain to the wool-grower, as this extra amount is produced at the expense of its mother, who not unfrequently suffers inconvenience from cold, as the lamb generally eats the wool from the legs and hindquarters of the ewe. WILBUR F. BAGGERLY.

Savannah, Wayne Co., N. Y.

Loss of Stock.—Within a short time E. C. Hawks of Charlemont, Mass., has lost 50 out of a flock of 250 sheep, besides a $225 horse and a fine ox.

PEACHES EVERY YEAR.

Eds. of Co. Gent.—In your issue of May 26th, S. W. Jewett gives us a short article on protecting the blossom buds of peach trees from the bad effects of the severe cold of our winters. Mulching trees as he directs may retard the blossoming of the peach in early spring, but I do not see how it can in any way protect the blossom-buds from the bad effects of the severe cold of some of our winters—such as was experienced over wide districts of territory in the Western States early in January last; or guard against the killing of the buds when as cold as it was here about the 20th of February. Up to the middle of February I had repeatedly examined the blossom-buds on my trees, and did not find a single bud with its "brown centre." On the morning of the 19th of February, the mercury was twenty or more degrees below zero. By the 1st of March, upon examination, almost the entire of the blossom buds upon all limbs not covered by snow, were found with the dark colored centre, and of course failed to blossom. And such, I have no doubt, would have been the case, had "the earth over the roots been covered with fine chips from the wood-yard, straw mulch, or coarse straw manure."

I have kept up a succession of peach trees on my grounds for over forty years, and have had more or less fruit from them at least fifteen out of the forty years. If the blossom buds were alive after the 1st of March, I think the trees have never failed to blossom and yield fruit, or in other words, neither the blossoms or fruit were ever injured by early spring frosts.

In autumns favorable to the perfect ripening of the new wood and fruit buds of the peach tree, they will safely stand a cold of twenty or more degrees below zero. In other winters, a temperature only twelve or fourteen degrees below is sufficient to destroy the buds and much of the previous season's growth of wood. This difference in different winters is occasioned by the immaturity of the new wood and buds at the setting in of winter. Highly cultivated, thrifty trees are more likely to winter-kill than those of slower growth. But both kinds, in this northern section, are liable to badly winter-kill if left unprotected, thus rendering the peach crop a great uncertainty, so much so that very few among us attempt to grow peach trees. But there are more ways than one by which peaches can be raised nearly or quite every year as far north as I reside. They can be raised in pots, as described in the Co. Gent. of June 16th, and successfully practiced by Mr. Pullen of New-Jersey. But that system requires too much labor and care to be of use to farmers and others who are not engaged particularly in horticultural pursuits. Another safe and pretty certain way to grow peaches every year, is to so train the trees that the limbs or branches can in autumn be staked to the surface of the ground with wooden hooks. I have successfully practiced this method for the past five years, and just so far as the branches were covered (during the most severe weather,) with snow, just so far they blossomed and bore heavy crops of peaches. The limbs thus protected will blossom a week earlier than on branches not protected, though I get but very few peaches from those not protected—some years not a single blossom appears above the snow line; this spring I had a number of trees that bloomed, which survived a cold of 20° below zero. Some winters we do not have snow enough to sufficiently cover the branches staked down. Therefore, to make a sure thing of it, the safer way would be, after staking down the branches to cover them with evergreens,—say spruce, pine or hemlock boughs. If any person will adopt the above plan in the management of peach trees, I have no doubt he may succeed in growing a good crop every year. L. Bartlett.

Warner, N. H.

The Chinch Bug Destroying the Wheat in Iowa.

Friend Tucker—I have been travelling through some ten or twelve of the eastern and interior counties of Iowa from the 8th to the 14th of July, and I must say that I never saw such destruction of any crop by *insects*, as the present crop of wheat by the chinch bug. The winter wheat was half or more winter killed, of which there was not more than one-fifth as much sown as of spring, and considerably over one-half the spring wheat is utterly destroyed by the chinch bug.

The crop was very promising. The drouth set in by the 20th of May, and continuing to the 20th of June, checking the growth of the straw just sufficient to make a good crop, and also preventing rust. But alas, I think this chinch bug must be the "Egyptian lice.'

Description.—The chinch bug is a small insect, the size of a half-grown bed-bug, nearly the shape of a fly, dark brown or nearly black, except its wings, which have a spot upon the back of each, colored a glossy gray or silvery color. They seldom fly,—I do not recollect ever seeing one fly,—but they run upon the ground, and up the stalks of wheat or corn, as nimble as an ant or any any other fast insect. When pinched with the fingers they are quite soft and tender, and their perfume is like that of the bed-bug. Will Dr. Fitch please give us a fuller description of *his and her* character. I think there are both genders among them.

In pulling up a tuft of wheat, we find an immense number of very small, red, young chinch bugs, so small that the naked eye can scarcely discern them. Last summer I found them among the weeds while hoeing in my nursery, where wheat had never been raised within half a mile. To-day I saw a few among the currants that were gathered from the bushes. They were probably gathered by picking the currants from the ground. I think very few are found out of the wheat-fields, except when they have killed the wheat and the straw becomes dry, or it is harvested; then they pass over into adjoining fields. I have known them to utterly destroy corn in such cases, on a strip from one to eight or ten rods wide. They work very little upon the tender straw and blade of the oats.

Yesterday while I and my friend were looking at the beautiful water power at "The Arnaud Society," twenty miles west of Iowa city, we saw a large number of chinch bugs along the side of the mill-race, which the water had prevented from going farther. A piece of wheat had just been cut, and lay in the swath just across the road, only six rods south. On passing down the main travelled road leading along the wheat-field, we saw the ground in grass and weeds nearly covered with the bug; and as we stepped from the side of the road to the wagon track, where the

ground was beat into dust or pulverized fine, *not a bug set foot thereon*, although the bare hard ground by the side of the wagon track was covered with them. I am told that a few freshly plowed furrows will stop their migration. Mr. Little told me that he tried it last year in a piece of sugar cane, but the bugs were seen over the furrows. He says they are not much on the wing, but will shoot down about like a flying squirrel. Query—did not these bugs pass his furrows by flying down from the blades of the sugar cane?

We must quit sowing spring wheat in the West until we get rid of the chinch bug. They do not injure the winter wheat much; and although that is an uncertain crop, yet if put in with the *grain drill*, the last of August, and a good mulching of straw manure spread over it before winter, we can raise our bread in that way. Farmers, sow timothy seed, and raise more grass and hay.

It has occurred to me, and I will recommend the *experiment* to be tried upon our "Experimental Farm," to sow wheat in drills twelve or sixteen inches apart, both spring and fall wheat, and pass a single narrow horse-cultivator through it fall and spring, and summer also, to see if it will not, to some extent, stop the the ravages of the chinch bug. I have not much confidence in this mode of cultivating wheat to check the chinch bug, yet the great importance of trying to remedy this enormous evil is worth the effort, or almost any other that has a possibility of success. But I have great confidence in the *cultivating of wheat in drills, with a horse-hoe*, to raise bread. It has been tried and found profitable. Will it not greatly assist wheat to live through winter, if the cultivator is passed through it in November? I would not only recommend it for the "Experimental Farm," but for very many *good* farmers (and who is not?) to try this mode in a small way, of raising wheat this fall and next spring.

Our farmers are now cutting the spring wheat, what of it remains from death by the bug, although it is green and in the soft dough. In this way they will save enough for our bread and what *little* is wanted for seed. At what state of greenness will wheat be sufficiently mature to germinate for seed? Will you, Messrs. Editors, please enlighten us a little on this subject? SUEL FOSTER. *Muscatine, Iowa, July* 14.

HAY MAKER'S DRINK.

MESSRS. EDITORS—As the time is at hand when the husbandman must go forth to put in the sickle and the scythe, and, while the harvest is plenty and the laborers few, it may be well for all to take heed what we eat or what we drink, that we may have good health and a vigorous arm, that every blow may tell. But I am not about to tell what men shall eat or drink, but simply to tell how I manage through the hot weather.

When I commence haying, my wife takes rye or barley, and burns it just right for coffee, and then adds one-third as much sweet corn without burning, and grinds them together, and makes as much coffee every morning as will be drank through the day, not very strong or sweet, and strains it off into a pail or jug. I take it out to the meadow, and set it down in the sun if you prefer it warm, or in the shade if cool, and it is always ready—will hurt no one, and is victuals and drink too. I seldom want a lunch when I use it. Molasses I think makes it better than sugar. Add milk to your liking.

This I consider the most healthy, the cheapest and best for me, for beer I cannot drink, and spirits I want nothing to do with. I sometimes take a glass of tamarind-ade at noon, or at 4 o'clock, with my lunch; this sets a good edge for food, and is recommended by physicians as very healthy in hot weather, and I find them to be so, for I have most invariably had a sick spell in haying, in consequence of drinking too much water, until I commenced their use once a day in connection with coffee. L. F. SCOTT. *Bethlehem, Conn.*

RASPBERRY VINEGAR.

Although now rather late to make raspberry vinegar, we have had an excellent opportunity of testing some recently made, which we found not only excellent, but made in a more economical manner than the raspberry vinegar for which directions have been usually given. Skillful housekeepers will do well to preserve these directions until another year, if they have not already something as good or better. This material forms not only a pleasant summer drink when diluted with water, but, in its more concentrated state, constitutes an excellent medicine for colds, croup, &c.

Directions for making.—Express the juice from raspberries; to one pint of juice add a quart of vinegar and one pound of white sugar; boil it till the scum rises, which skim off, and bottle it for use.

SHEEP GROWING.

Last sgring was one of the most trying ones for sheep we have ever known. In March we began to hear complaints from farmers, that they were losing more than usual. But the great mortality was to be chronicled among the misfortunes of April. On examination after death, grubs were found in the heads of sheep examined, varying in number from one to a dozen. These grubs were undoubtedly the cause of the loss of sheep, which, in some flocks, we have been told, run as high as one-fourth of the number wintered. There were many flocks, however, in which the loss was less, and in some no loss at all.

There were, no doubt, ample causes for the disease, if it be such, and first among these we refer to the rains which were so prevalent in late summer and in the autumn of 1863—rainy seasons always being favorable to the increase of insects, and the more insects as a matter to follow, the more animals will be annoyed with them.

The grass of 1863 grew quick; of course it did not possess the substance of grass of ordinary years. Fall feed was subject to frequent and heavy rains. It was a very light food for animals, and fed on it, they did not come to the barn in as good condition as when they graze on grass of usual growth, and others being fed on hay, grown in a short time and in frequent rains and unusual cloudiness, light in value, they did not thrive in winter as in most seasons.

The grain crop was light, in weight at least, and prices ruled high. Farmers did not, in many instances, feed as much to their stock as usual, and that fed, did not give so much nourishment.

The temperature of the winter was much milder than we had had for many years and the ground free from snow much of the time. Farmers, in many instances, kept their sheep as close as in winters of severe and uniform cold. For the want of proper ventilation, many flocks were kept in an atmosphere corrupted with their own breaths, and this of itself was enough to hasten disease, and in flocks so kept, closely confined to tight sheds and warm yards, that we heard most complaint of grub in the head.

July 1, 1864.

ITALIAN BEES.

How are they Propagated and Can they be Kept Pure?

Notwithstanding these questions have been pretty thoroughly discussed, I have yet so many inquiries that I wish to send an answer, as before, through the Co. GENT.

The movable comb hive of some kind is much more convenient for changing bees from the natives to the Italians, than the box hives. To undertake without it requires a good show of skill and perseverance. Mr. Fairchild has given the process of transferring bees, comb and honey from one hive to the other. The convenience of having bees in movable frames is almost enough to pay for the trouble of transfer. But it is much the best way to put the swarm in the empty hive, and let them build their combs just where they are wanted. Elevate one end of the hive a few inches, giving the frames a pitch of about 30 degrees, and have the hive exactly vertical the other way, and the combs will be straight on the frames, a result not always attained by other means.

A person intending to introduce the Italians to his apiary and keep them pure, should be familiar, at least, with some part of their natural history. He should know that a few bees shut up without a queen will, when given a piece of comb containing eggs or larva for workers, convert some of them into queens—that eggs laid in the large cells—those in which the drones are reared—will hatch drones and nothing else that such eggs are unimpregnated, and although a queen may be pure Italian, and have mated with a black drone, and her workers hybrids—some beautifully marked, others black—her drones will be perfectly pure like herself. I shall not go into any theorizing on this; I only state it as a fact well established.

If queens are to be reared extensively, a number of small, movable comb, miniature hives should be provided, about the right size for a quart of bees. The combs should be 5 or 6 inches square, cut just to fill the frame and fastened. From three to five should be put in each box. To get the brood, examine the hive containing the laying Italian queen, near the middle of the day, and look into the cells of the different combs till you find a spot occupied by larva. That which is about two days old can be matured several days sooner than from eggs just laid. With a sharp knife cut out a piece 3 inches long, by three-fourths of an inch wide. About the centre of the middle comb in the little hive cut out a piece just the size of this containing the brood. After fitting it in, cut away under it a space of half an inch, to make room for the cells, the whole length, except the ends, which will require a shoulder of half an inch left to support it. The bees weld it fast immediately wherever it touches. Some of the little combs should contain honey enough to last a day or two; otherwise feed some other way. Have ready before hand near a quart of bees—in hot weather a less number will do—to introduce to this prepared box. To get them in, open a hole in the top of the box in which they are confined, and set the box—little hive—over it in such a way that no bees will escape. If the bees are not to be removed from the yard where they are taken, they should be confined 48 hours; if removed a mile or two, 12 hours is long enough. Let them stand 20 feet from others. Procure the bees by driving out a few in the middle of the day, when most of the old bees are out foraging, or a few may be taken from a swarm just issued—the latter need not be confined more than six or eight hours. They usually construct several cells on such piece of comb. The first queens will mature sometimes in ten days, and the first one that hatches will destroy all the others. To prevent this—if you care to rear many—on the tenth day take out the comb and cut out without injury all but one. These, kept warm and handled with care, may be given to other little colonies to hatch, instead of brood to begin with. Put in in a natural position, when it will be kept warm by the bees. The queen will often commence laying in eight days after leaving her cell, when she is ready to introduce to a full colony.

The hive to receive her should be prepared by removing its native queen at least a week beforehand. It is then to be opened and *all queen cells cut out.* Mr. Aspinwall's method of smearing the queen in honey and dropping her among the bees is as good as any, if not the best way of introducing.

Should you have more than one queen, and the stock to which she is to be introduced is strong enough to divide, it is well to make two at the same time. Put half the combs with bees into an empty hive, that is in color and appearance as near as possible like the old one. Fill out with empty frames. Set each hive one foot distant each side of the old stand. The half without the queen, in a day or two, will begin royal cells. In the other hive is the place to look for the native queen which is to be destroyed, and is found by looking over just half the ground that would be required before the division. In a week look over and cut off the queen cells, when they are ready for the queens. In three weeks her workers begin to mature, and in three months, in summer, the whole colony is changed to Italians. If any of the workers are without the yellow girth, the distinguishing mark, they are hybrids; and the queen, to breed from, rejected as impure.

When practical to isolate the Italians three miles from the black bees, but little trouble would be needed to keep up their purity. With a colony or two to furnish drones, any number of queens might be reared with much certainty of producing pure progeny. Three miles seems to be the limit to which the drones and queens will fly. As the distance diminishes, the chances of mixing are increased. Where there is no possibility of isolating, purity must be secured by other means. Raise a queen for each colony in the apiary the first year—if one hundred, all the better. Have no regard what drones they meet. When they commence laying, introduce them. The drones from these queens will be as pure as the original mother, and if there are many colonies, they will be in overwhelming numbers. And a young queen flying out in this yard will be quite sure to meet one of these drones. The next year raise another set of queens from the original one, or another equally pure, and they must nearly all produce pure progeny. By removing one occasionally, that has demeaned herself by going astray, and is exposed by her mixed family of children, there will be no trouble ever after.

The full colonies can be made to rear a great many queens the second year. As soon in the spring as there is a prospect of drones to meet the young queens, begin by removing a queen from a colony, and at the end of a week cut out cells as before directed, and take the original pure queen and let her visit families, changing from one to the other, leaving her three or four days in each hive; each one to be prepared in advance of her coming, and some of the brood she leaves will be converted into queens. This is done best in the early part of the season, before bees are much increased. When done near the swarming season, these young queens will lead out swarms. At other times the supernumerary cells may be cut out, and given to colonies instead of the old queen. About one-half will succeed. They may be put in on the day of removing the hybrid queen, and often hatch next day. In large apiaries it would be well to have several pure queens, that they might get

round in season; also, an only queen might be destroyed accidentally, and cause serious delay in the proceedings.

Still other methods may be taken where but few colonies are kept. Select a colony in season with a great number of drones, and by making and keeping it queenless, if fed liberally they will be kept late in the fall, long after the black drones are destroyed. Then raise the queens. Again in the spring, by feeding a strong Italian colony early to induce rearing drones, before there are any black ones, a number of queens may be secured free from any black taint.

If all the bee-keepers in a neighborhood could be induced to join together and Italianize their apiaries at one time, it would be much less trouble.

It will be a long time before they can be bred pure without trouble, and whoever purchases at a price far below the expense of rearing them will be very likely to get a cheap article, and then report the Italians no great affair. Apply to some reliable person that can distinguish the pure from the hybrid, and order the genuine to begin with, and there will be little doubt of full satisfaction. M. QUINBY. *St. Johnsville, N. Y.*

COOL CELLARS.

It is nothing to have a cool cellar, provided you have command of the doors and windows, which, however, is not the case with all cellars. Many admit rats and cats, and we have known dogs to find their way into the cellar, to say nothing of still worse animals for such a place.

This, of course, ought not to be. A man who has care for himself, will care for his cellar, and we may say *vice versa*. But a cellar should exclude every thing at the will of its owner; then you will be prepared to exclude warm air, which is the grand point in having a cool cellar. The whole secret is this: open your windows when the weather is cool—close when it turns warm, and keep closed till cool again; then throw open to let fresh air in.

We thus have had our windows closed during the past drouth of two weeks, when the thermometer ranged at 90°. Our cellar was cool during all the time, while others were little better than upper rooms. Butter softened in these cellars; flies abounded, and were found in every thing not closed tight. There was no use in having a cellar kept thus warm. Ours, on the other hand, was cool, the butter solid, the apples, (Greenings and a few Spitzenbergs) safe; there was no working of sauces, no difficulty with sweets of any kind; milk preserved its sugar for forty-eight hours. It was a cool cellar during all this time, and is so during the summer. Is such a cellar desirable? Aye! but where is the fresh air? I do not like confined air in a cellar. Of course you do not; and there is less in a cellar than in an upper room, because there is no breathing there, (or little) to foul the air, and there is no heat to raise effluvia; and there should be nothing to raise it from. The air may remain for a month in a previously well aired cellar, kept scrupulously clean, the ingress and egress at the door admitting sufficient change. How is it in winter, when cellars are closed for months?

We have practiced this thing of testing our cellar so thoroughly, that there is but one thought on the subject with us. The trouble is not much to attend to your windows once in a week, or once in two weeks. It takes but a moment to do it—and when once in the habit you will not forget it.

Now such a cellar is the cellar for butter—not only to keep it, but to make it. Here your milk is as you want it—plenty cool enough even in the doggest of dog-days. There is little difficulty in churning; you have June in your cellar the season through. We have experienced all this; we are experiencing it daily. In the cool nights then, that we sometimes get, up with the windows, and the cellar will next day be filled with the new air. Close at about nine in the morning, and you have a store in hand for a long time. F. G.

SHEEP-SHEARINGS.

MESSRS. EDITORS—In the COUNTRY GENTLEMAN and other papers, are various accounts of sheep-shearings. A summary is usually given of the weights of the animals, either before or after being shorn, and of the weights of the fleeces. Premiums are sometimes awarded, by committees chosen for the purpose, to such sheep as are considered "best;" but precisely what constitutes the best, or what is the scale of merit does not so clearly appear. It may be well enough understood by the men who make the decisions; but could they not enable others to understand it?

As the sheep which are entered for these shearings are generally of the Merino breed, and as nothing is usually said in reference to carcass, except to mention the weight, it seems probable that the estimate of value is based on the wool. What are the rules for fixing the relative value of the fleeces? The only points patent to the public, are the relative weights of the carcasses and fleeces of the different sheep as taken at the time they are shorn. It is obvious that this gives but a very imperfect idea of the relative *value* of the fleeces, or even of the relative quantity of *wool*. The weight of the fleece may be honestly given, but how much *clean wool* does it comprise, and *how much is it worth?*

The sheep are generally shorn without washing; and perhaps it may be said that if one-third of the weight of the fleeces is deducted, they may be reckoned at the same price as ordinary washed wool of the same quality of staple. The rule alluded to, however, for bringing unwashed to the standard value of washed wool, is a very unfair one, on account of the great variation in the shrinkage or waste of fleeces in cleansing. I am informed by manufacturers who have made the most careful trials, that the shrinkage by scouring in unwashed Merino fleeces, varies from fifty to eighty per cent., while the shrinkage of long-wool fleeces—like those of Canada, for instance—usually ranges from twenty-five to thirty-three per cent.

I lately witnessed the shearing of a lot of rams, and the weighing of the carcasses and fleeces. They were all Merinos, and all owned by one man who had the weights taken for his own gratification or benefit. None of them had been washed, but the weight of the fleeces in proportion to the weight of the carcasses evidently afforded no proper criterion of the relative *quantity* of wool, and still less of its *quality and value*. In one instance a fleece which weighed ten pounds was thought by all who examined the lot to contain more wool than one which weighed fourteen pounds, while the lighter fleece, in the same state of cleanness, would be worth most per pound.

Is it reasonable to suppose that a rule so unfair as that which brings all unwashed wool to the same standard as to waste or shrinkage, can be long maintained? Why should not the buyer be able to form an opinion approximating to accuracy, in regard to the relative proportion of waste in every fleece he handles?

In the mean time, if competitive matches are got up, why not make the attempt to regulate them on a proper basis? Why should not the parties agree to have the wool of their sheep sent to some suitable person to be cleansed and sold or appraised? This would at least show what sheep produced the greatest *value* in wool in proportion to the weight of carcass.

Of course there are other points which it would be proper to consider in such a trial—as the length of time which each fleece had been growing, and the keeping and general treatment, as far as it could be ascertained, which each sheep had received.

Lansing, Mich., June 30, 1864. SANFORD HOWARD.

THE CULTIVATOR.

ALBANY, N. Y., AUGUST, 1864.

☞ Our Prussian correspondent, a gentleman of extended agricultural experience in Europe and of considerable acquaintance with farming in this country, has favored us with an article on Preparing the Land for Fall Crops, to which we call the attention of our readers.

The mode of "skim-plowing" he describes is new to us, although possibly it may not be to all. We should be glad to know how the process proposed strikes our experienced readers, and to have it experimented with if the arguments in its favor seem sufficiently convincing.

If we rightly understand our correspondent's views, he does not by any means recommend, as might perhaps be supposed on the casual perusal of his letter, *shallow plowing for winter grain;* but simply that just as soon as possible after the removal of the standing crop, the sod, (except it be clover,) or stubble, or growth of weeds if there be one, should be turned over with a thin slice of the upper soil, to serve equally as a mulch and as a manure for the field, giving the land in effect, as he says, the benefit of a *fallow* between the skim-plowing and farther tillage, and preventing the baking of the surface which might obstruct the next plowing. He prefers one plowing only for wheat, but we infer, although on this point his remarks are not quite clear, that it is one plowing *in addition to the skimming.* As in one of his previous communications, he shows that German farmers are fond of a certain degree of compactness in the land sown to winter grain.

It is a matter of interest to note that American plows appear to be working their way into the hands of Continental farmers. Our correspondent it seems, has seven of different patterns, and his position as Secretary of the Agricultural Society of his District, and editor of a periodical devoted to farming matters, must be such as to call the attention of large numbers of others to their merits, and to promote their farther introduction.

The Size of Dairy Stock.—In one of our recent Foreign Notes, we quoted an essay on Dairy Farming, the author of which advised increased size of stock according to the fertility of the land—if it be rich and good, that large and well-bred cattle could be most profitably kept, while on thinner and poorer land, small crossbreds were more suitable. Mr. FLINT, in the account of his visit last year at the Agricultural School at Grignon, France, states that experience there has proved "the expediency of combining the production of milk with a fat carcase, without feeding so high, however, as to lay on tallow." He says the Swiss cattle, which are the heaviest, prove to be at the same time the most profitable, "that is, they give a greater yield of milk in proportion to food and live weight." The dairy stock at Grignon includes about "100 head, of Normans and Swiss, and some Short-Horn and Norman crosses, some Ayrshires, and some little Bretons. The average yield of milk varies, generally, from six and a half to eight quarts per head per day for the year."

In another part of his tour, Mr. Flint speaks at some length of the Swiss cattle as he saw them at home. The cows of the Simmenthaler weigh on an average, he estimates, 1,300 to 1,350 lbs., sometimes reaching 1,600 lbs., while the bulls often reach 2,200. In this region the Gruyere cheese is made, which is so largely exported, and which appears to derive either from the mixed herbage of the pastures or other sources, a sweetness and delicacy of flavor peculiar to itself.

Cashmere Goats.—A correspondent of the COUNTRY GENTLEMAN in Alleghany county, Penn., sends us a beautiful sample of the fleece of these animals. It is from a flock owned by Mr. JAS. H. MCNALL of North Star, who have imported eleven head of Cashmere goats in the autumn of 1863. Our correspondent says: "These goats have passed triumphantly through one of the hardest winters we have ever seen and stood it as well, if not better, than sheep that were sheltered under the same roof, and received the same attention in every respect. They not only stood their long and tedious journey last summer, endured the piercing storms of the winter, but have also raised their kids, (some of which were dropped in extremely cold weather in March,) and yielded each between three and four pounds of beautiful glossy and silk-like fibre, a sample of which I enclose. On the different animals the fibre varies in length from 10 to 15 inches. From appearance here now, I think the goat enterprise will be a success, and Mr. McNall will not only be well repaid in this branch of his stock growing (he is also a Spanish and Texel sheep breeder,) but will have the thanks of the community for introducing animals of this kind in these *cotton scarce* times. He has ordered 20 head more, to be here in October next."

Our correspondent also remarks that the fears excited in his mind as to the value of these animals in this country, by the recent discussions on the subject in the COUNTRY GENTLEMAN, have been entirely dispelled by the facts above stated.

Pennsylvania Agricultural College.—A private letter refers to the late Dr. PUGH in the following terms:

"When last fall I gave you a little account of the condition of the College then, I little thought that its noble President would be so soon taken away. On hearing of his death I thought of writing a short notice of his character and work for your paper; but when your article appeared on the same subject, I was too well pleased with it to wish to add anything. He died after an illness of a week only, of brain fever, and was taken away just as the buildings were nearly completed and the Congressional endowments almost secured forever to the College; he was beginning to have more time for his classes. An unfinished sentence of a lecture in course of preparation, found on his study table, gave melancholy evidence of the unexpectedness of the call to go up higher. His life was sacrificed for the College. Could any man desire a better monument to his memory than what is hoped by all its friends for the Agricultural College of Pennsylvania?"

To the above we may add that, according to a statement in our Pennsylvania exchanges, the trustees have elected Professor WILLIAM H. ALLEN, formerly President of Girard College, to take the place vacated by the lamented death of Dr. Pugh.

Remington's Cultivator.—The editor of the Genesee Farmer says: "I have just been using one of Remington's two-horse cultivators. It is the best implement of the kind I have seen in this country. For mellowing the soil and putting in spring crops we much need a cultivator with long, slender teeth, sloping forward. The Remington Cultivator comes nearer to this than anything I have used. The common two-horse wheel cultivator is much harder on the team, and does not do anything like as good work.

The Clover Crop. — Our Prussian correspondent raises the question this week of the repetition of the Clover crop on the same land, and its ultimate result. Experience in England, as well as in Germany, is strongly against a too frequent sowing of clover. Sainfoin and other substitutes have consequently been tried when the regular year for "seeds" comes around, so as not to put in clover oftener than once in 8 or 12 years. This "clover sickness," as it is called, is a very curious thing, and science as yet has shed little if any real light upon it. So far as we are aware, when the land once refuses to produce the clover plant, no fertilizer has yet been discovered to ensure a crop; the only resource of the farmer is to wait the mood of the land—a somewhat tedious and perhaps not always a certain remedy. Lands in the county of Columbia, in this State, have been through this experience; some of them may be suffering from it yet, where clover was grown again and again in alternation with wheat, until the game was "played out."

But there is some land in Western New-York, which seems to bear the repetition of the clover crop—thus far at least—without entailing the consequences referred to. About Syracuse, where it has been so long grown, and, so far as we are aware, on the wheat lands of the western counties generally, "clover sickness" is as yet unknown. If we are wrong, we should be glad to be informed if any symptoms of the kind have made their appearance, and how often for any considerable period, clover has been grown on the same soil. It may, however, be uncertain whether immunity for forty or fifty years of frequent repetition, is an entire warrant of similar immunity indefinitely in the future.

Education and Practice in Farming.—Mr. ROBERT RUSSELL has been delivering a series of lectures on Rotation of Crops before the students of the Royal Agricultural College of Cirencester, and, in the course of a few general remarks in conclusion, he very justly said, as regards the proper relation between education for farming and success in practice:—"There is a good deal said and written nowadays on agricultural education, as if this were really a royal road to success in farming. No doubt, if kept in its place, it will bear good fruit; but the less conscious you are that you already possess any advantage over those with whom you are in after years to come in competitive contact, the more likely are you to turn the stores of solid information you have laid in to the best account. * * * The rudiments of the science of medicine, law, or any other learned profession, are taught in lecture-rooms; but the lawyer only really begins to learn his profession when he begins to practice at the desk or at the bar—the medical man when he takes to the hospital or a regular town or country practice. So it is with the agricultural student, however liberal his education may be, over and above all his other acquirements. Skill and business habits must at last reign supreme, else all the rest will come to a poor account indeed. Practice can only teach you these, but they will be all the more easily acquired after your minds have been exercised under so efficient a system of training as the permanent studies of this institution afford."

Mole Draining.—Mr. MECHI, who seems by the way to have more leisure than usual this season for the use of his pen, has written an article upon draining, in which he gives it as the decided result of his 22 years' experience, that at least on stiff soils, lines of drains at frequent intervals and moderate depth are preferable in all respects to a smaller number farther below the surface. He also shows that Mole Draining, which has been adopted with good success in some parts of this country, particularly at the West, is now receiving greater attention in England. He says:

"A great deal of draining work is being done by Messrs. Eddington, of Clemsford, by a powerful engine working a mole plow, at 3 feet deep and 16½ feet intervals. No pipes are put in, but a tunnel larger than a tumbler is formed by the mole forcing its way and compressing tightly the earth or walls of the tunnel. Although I had considerable doubt about its success, especially in our collapsing and uncertain clays, I have seen and know of so many instances of its success that there can be no mistake about it. A good deal has been done in my neighborhood. It is a cheap, quick and effective way of getting rid of surplus water by a tenant-farmer who has no compensation for drainage—from four to seven acres can be done in a day. The cost, including horse and manual labor, coals, hire of engine, &c., is under £2 per acre. I believe, out of this, 16s. to 18s. per acre is for the hire of engine, with drivers, &c.

A Good Average.—Mr. N. T. SPRAGUE, Jr., of Brandon, Vt., writes us that his flock of "Spanish Infantado Sheep," numbering 36 head, 27 of which are ewes, altogether sheared 459 lbs. of wool—an average of 12¾ lbs. per head. One yearling buck named "Tom Sayers," weighed before he was shorn, 78 lbs., and the fleece taken from him weighed 17¼ lbs. Mr. Sprague was offered for this lamb last fall $1,000. Another, "Heenan" by name, weighed before shearing 97 lbs., and his fleece weighed 15¾ lbs. "Both had even, thick fleeces with long staple, and even the fore arm of the latter was filled under with wool."

Large Strawberry Crop.—Mr. A. M. PURDY of South Bend, Ind., sends us a statement of seven days' shipments of Strawberries by him to the Chicago market, as follows:

June 7th, 12 bushels,	price.....	.....	$24.75
do. 8th, 34½ do.	do.		266.50
do. 9th, 36½ do.	do.		286.75
do. 10th, 33 do.	do.	.....	316.00
do. 11th, 30 do.	do.		257.00
do. 12th, 57 do.	do.	.....	432.00
do. 13th, 36½ do.	do.		297.50
Total, 244½ bushels.	Total of seven days sales,		$1,950.50

His agent in Chicago challenges any one to show larger receipts from one man in the same time, or a *better* average of berries for same quantity, or a larger sum realized for the same quantity of fruit, and Mr. P. thinks this statement a little ahead of one we lately copied from the Chicago Tribune.

Crop Prospects Abroad.—We condense the following statements from the Mark Lane Express: In Great Britain "at present there is a fair prospect on the ground, although no one expects more than an average crop of wheat. The season has been favorable throughout, and nothing can be more so than the present most critical period of the growth of that plant—the blooming time. So far, therefore, as our own prospect is concerned, we have reason to be satisfied. Still, under the most favorable conditions of our own crop, experience renders it impossible to avoid the conviction that we cannot get along without a foreign supply to an extent proportioned to that of our own growth. * * In France the prospect is fair, but nothing equal to what it was last year. In the south and southeast especially the drouth during the spring destroyed the plant in many of the fields on which the land was light. It is therefore probable that France will want a considerable foreign supply next season, as she, like England, does not grow sufficient on an average for the consumption of of the country."

As to the crop in the United States, our contemporary naturally takes the gloomiest possible view, as indeed it has done every season for three or four years past. Heretofore, most fortunately, the event has completely falsified its predictions; we wish there was equal ground for hope that such might be the case with the coming harvest.

The "Rock Rose."—A California friend sends us by mail a curiosity in vegetation under this name. It was gathered in the vicinity of Cape St. Lucas, and is evidently a very different thing from the "Rock Rose" of the Eastern States. On opening the box, it seemed little more than a dry ball of leaves, quite rusty in appearance with little show of green. On following the accompanying directions, however, and immersing it in water a few hours, the leaves unfolded, of a deep, rich green in color, and extending in concentric circles from a common centre to the diameter of four or five inches. If placed in a saucer of water, it continues in this condition, or it will resume it at will, after being again dried, on the renewed application of sufficient moisture. It is the first time we have seen it, and it is certainly one of the most singular natural productions of the Western coast that has yet come to our notice.

Iowa Agricultural College.—The Trustees of this Institution held a meeting on the 15th and 16th insts., at which twelve plans for the proposed College buildings were presented, varying in estimated cost from $45,000 to $75,238. After a thorough investigation, the plan of John Browne, Esq., of Des Moines, was selected by a vote of seven, to five cast, one each, for five other plans, after which vote the choice was made unanimous. The Board also decided on the site of the College building, which is on a beautiful knoll a short distance west of the centre line of the farm, in Story county, and near the centre north and south, with the principal front facing the east. The plan for the building adopted contemplates a basement of stone with three stories of brick, in rural Gothic style, cost not to exceed $50,000. A contract for the making of the brick has been let, and one for the stone work is advertised. Water is to be carried to the house and barn and College buildings from a big spring about half a mile distant, and to be elevated about sixty feet, with one of Eames' "Water Engines." The farm is thirty miles due north from Des Moines.

The Iowa Agricultural College.—I have just returned from our College Farm, where we have let contracts to put in the stone basement this fall—contracted for the burning of 700,000 brick and all the joists, studding and timber for the building, at $26.50 per 1,000, delivered—of white oak and burr oak, and red (slippery) elm. These contracts are a little below the estimate costs, which gives us assurance that our very beautiful and commodious College building can be built within our limit, $50,000. SUEL FOSTER. *Muscatine, July* 14.

Our Cattle Law.—A friend calls our attention to one or two points, in which he thinks the Cattle Law of this State may be advantageously modified. He has a neighbor who keeps mules and donkeys; the law, as it now stands, only provides that "it shall not be lawful for any cattle, horses, sheep or swine to run at large in any public highway," and the Justices in his town think the animals aforesaid not specified in the above quotation, and thus he can get no redress for the destruction by them of an acre or two of strawberries—not even the slight satisfaction of impounding the trespassers and getting the costs out of the owner. For the benefit of his Justices, he wants the ass legally defined as belonging to the class either of "horses" or "cattle."

In the second place, having done something to bring straggling stock to justice, he has incurred the odium of vagabonds who show it by pulling his fences down to let his stock out or other stock in—and, although section fifth of the law would seem to impose a penalty of $20 on the offender, he thinks it not clearly enough defined, and that a farther provision should be added whereby he can recover damages in such a case large enough really to operate as a restriction on the petty malice of the violators of the law.

He also complains that in cases brought before Justices in this county, they have made no allowance for the care and feed supplied to straggling animals seized on the highway, so that it has been a source of loss to promote the execution of the law. The provisions of the act are sufficiently distinct on this point, and we do not see how they can be evaded.

Pratt's Ditcher.—Have you heard of, or do you know anything concerning this ditcher, about which considerable was said some years since?—MASON. *Columbia Co., N. Y.*

We do not. It was found by those who used it to be a material aid in digging ditches; but we suspect the demand for them is not sufficient to warrant continued manufacture. We may be wrong, but we have lost sight of them latterly. Its price was an obstacle to its success, though cheap enough compared with the cost of manufacture, perhaps.—*Rural New-Yorker.*

The above are part of the reasons for the disuse of Pratt's Ditcher. An additional and prominent one is the fact that it is both a heavy and a complex machine, and has to be drawn with considerable force. As nearly all our land is more or less stony, and the weight of the machine gives it much momentum, striking a great stone racks it badly, and some of its numerous parts cannot fail to become more or less bent by such treatment. One part being thus deranged, disorders the working of the whole machine; the consequence is that while the ditcher works admirably for a short time, while new and uninjured, it gradually becomes unfit for service and is cast aside for the simpler pick and shovel.

Agricultural Societies.—We have to acknowledge the receipt of a number of Premium Lists for Shows the coming autumn—among others of the Pennsylvania and Indiana State Agricultural Societies, the Provincial Ag. Society of Upper Canada, etc.

Our usual List of the Exhibitions of 1864 is in course of preparation, and we shall be obliged if our friends will send us circulars or marked newspapers showing the time and place of holding State, County and Local Exhibitions, in order that they may duly appear.

Cheese at Little Falls.—The Journal of the 14th says:—There was another great rush of farmers in town on Monday. It was found impossible to unload it all with the limited facilities at the freight depot, and many loads were left in the store-houses of our principal merchants. All was sold, however, bringing prices higher than ever. One man actually refused *twenty-four* cents per pound. Many lots brought twenty-three, but the average price paid was probably less than twenty-two cents. Yesterday 4077 boxes were shipped, weighing 357,415 pounds, at prices varing from 22 to 24¾ cts.

Peaches in Pots.—In our recent notice of the mode of raising peaches in pots, as practiced by I. PULLEN, of Hightstown, N. J., two essential points for success were omitted. The pots should not be removed from the house to open air more than a week before the time of full ripening—otherwise the leaves will suffer from the curl, and the fruit be flavorless. In pinching back, the process should be omitted before the terminal bud is formed, this being the bud for the continued future growth of each shoot.

Sheep in Kansas.—A Kansas subscriber writes that in the autumn of 1862 he bought 6 ewes for $13.50, and has made cloth which he has since sold for $26 from the wool of the flock thus started. He was offered $75 for them in the spring, but his wife thought he could do better by keeping them. This year's fleeces will make cloth to the amount of $60. The flock now numbers 24 head. He thinks Kansas a good State for wool growing.

Inquiries and Answers.

The Herd Book.—I wish to procure vols. 5 and 6 of the American Herd Book. Will you either give me the address of the publishers, or procure me the vols. and forward to my address? Please also give me the address of the Secretary of the Vermont State Agricultural Association. F. E. W. *North Hatley, C. E.* [For the vols. of the Herd Book, which we cannot supply, address the editor, Hon. L. F. ALLEN, Black Rock, Erie Co., N. Y. The Secretary of the Vermont State Agricultural Society is Col. D. F. Needham, Hartford, Vt.]

Berkshire Pigs.—Should pure Berkshire pigs be perfectly black? I have bought three as pure, and they are white at the snout and feet, and some small white spots. I have been under the impression that Berkshires were pure black. How is it? E. A. R. *Illinois.* [This question was thoroughly discussed in our CULTIVATOR, in 1840. The late JOHN LOSSING of this city, who made several importations of Berkshire pigs, and whose stock was at least equal, if not superior to any ever bred in this country, said that Mr. HAWES, an Englishman who brought over a number of Berkshires, and from whom Mr. L. made his first purchase, assured him that he had never "known a full blood Berkshire to have less than three white feet, some white in the face or end of the nose, and occasionally white hairs interspersed over the whole surface—the end of the tail is invariably white."]

Clover.—I have a meadow to re-seed after mowing, and would like to put on a share of clover. Will it do to put on then, or should I wait until spring to escape winter-kill? G. W. H. [It is not probable that the clover will grow sufficiently strong this year to withstand winter-killing, although if the ground were sufficiently moist, as well as fertile, and in fine mellow condition, it would do so. Under the circumstances it would probably be best to get the ground in good order and sow early in spring, brushing lightly or rolling in.]

Bone Dust.—Should soil be very dry to compost with ground bone, or will fresh dug do as well or better? G. W. H. [Provided the soil can be finely pulverized and thoroughly intermixed with the ground bone, the moist will do as well as the dry earth; if the dry is used, it should be somewhat moistened afterwards.]

"Boughton Wheat."—Can you give me the address of any person that has the Boughton wheat for sale, described by your correspondent B. TOMPKINS of Kanawha, Virginia, in the April No. of THE CULTIVATOR? H. K. *Wrightsville, Pa.* [We cannot. Perhaps some of our readers can furnish the desired information.]

Barrel of Potatoes.—Potatoes, onions and other vegetables, are generally quoted in the New-York market by the barrel. What does a barrel mean—the contents of an ordinary flour barrel, or, (as with corn in the West,) a given number of bushels? If the former, how many bushels does a flour barrel contain? V. G. P. [Two and a half bushels of potatoes or other coarse vegetables, are considered a barrel, and if measured liberally in a half bushel measure, will fill an ordinary flour barrel.]

Price and Weight of Beef Cattle.—I am sure you have one subscriber, and probably many more, who cannot understand the quotations of the beef market. Take for instance your number of April 14th—premium beef is quoted in Albany at $9 per 100 lbs. live weight. This is plain. But the same kind of cattle are quoted as being in New-York "$16.50 per 100 lbs. for four quarters." Is there ever more or less than *four* quarters in a whole? In Boston you say it is worth "$12 per 100 lbs. on the total weight of hide, tallow and dressed beef." If this is not "all a muddle" to a man of ordinary comprehension, who is not *au fait* in drovers' business, I should like to see something that was. I tried figures to lead me to a conclusion, but failed. At the prices given a 1,500 pound bullock would be worth $135 in Albany. To make the same sum in New-York, his four quarters would have to weigh 820 lbs., and his *fifth* quarter, by which I suppose is meant his hide, loose tallow, head, horns, heart, liver, lights, shanks, intestines, &c., 680 lbs., would be thrown in. But according to the Boston programme, we must have 1,125 lbs. at 12 cents, to make the $135. Will you explain the matter? And if there is any good reason why the Albany mode, which every person can understand and which would enable all to compare the difference in the markets, should not be universally adopted, will you give it? Q. [We confess we are at loss entirely to reconcile the differences, and should be glad if some of our readers thoroughly versed in the matter would reply. Our correspondent's suggestion as to the adoption of a uniform system of quotations would be an unmistakable improvement.]

Fences.—In reply to JOHN SCOTT'S inquiry of his brother farmers, I would recommend, if he wishes to prevent the passage of swine, a flood gate; that is, something similar to an ordinary panel or picket fence of suitable length, and suspended by two short chains from a pole resting at each end on strong forks set in the ground on each side of the stream; the pole should be above high water mark. But if he only wishes to fence against ordinary cattle, three or four poles of chestnut or some other light and durable wood, attached by short chains to a substantial post on one side of the stream, and the other ends rested on pins driven into another post on the other side, make a convenient and reliable fence; the poles should be attached at the large end to the post, and then in time of freshet they give way to the water and swing around on to the bank, and can easily be replaced after the water subsides.

Concordville, Pa., 7 mo., 18th, 1864. B. W. P.

Red Detroit Apple.—Please give a description of the Detroit Red apple which is noticed in a late number. I find no description of said apple in the books, and, as it is called one of the best fall apples, I desire to know more about it. F. [This fruit is described both in Thomas' and Downing's Fruit Books. It is a better variety than the Black Detroit, but still cannot be classed better than second rate, although from its color and appearance, it is cultivated to some extent for market. We give the following full description from Downing: This fruit, commonly known in Western New-York and Michigan as the Detroit, is supposed to have been brought to the neighborhood of Detroit by early French settlers, and thence disseminated. Fruit of medium or rather large size, roundish, somewhat conical. Stalk three-fourths of an inch long, planted in a deep cavity. Skin pretty thick, smooth, and glossy, bright crimson at first, but becoming dark blackish purple at maturity, somewhat dotted and marbled with specks of fawn colour on the sunny side. Calyx closed, set in a shallow plaited basin. Flesh white, (sometimes stained with red to the core in exposed specimens,) crisp, juicy, of agreeable, sprightly, sub-acid flavour. October to February.]

Spinning-Wheels.—I have understood that there was a new invention of spinning-wheels, made to run from eight to twelve spindles at a time, and that one person could run them all as easily as one spindle. If you know anything about them, please say, through THE CULTIVATOR, what the price of them is, and where they can be had? W. PRICE. *Monroe Co., Pa.* [We have no knowledge of the wheel alluded to.]

Relief for Choked Cattle.—As soon as you discover that any animal is choked, get some fresh cow manure and open the mouth of the animal and thrust it down the throat of the animal as far as possible, upon a stick, or as may be convenient. The animal will at once heave, and either throw the stoppage from the throat or swallow it. I once knew an instance of an animal being cured that had been choked nearly all day and was bloated very badly. I think it to be a sure thing. A SUBSCRIBER. *Potsdam.*

Washed and Unwashed Wool.—What is the customary difference in price between wool sheared from washed and unwashed sheep? G. W. H. [The difference is generally estimated at about one-third.]

California Raisins.—Tell W. B., who, on p. 270, asks about American raisins, that, notwithstanding the efforts of Davis, Lee & Co., "America" is still a rather extensive country, and that there is not a grape known to the civilized world, that is not "hardy" in this part of it, and that there are but few varieties that have not been more or less experimented with here, to ascertain their applicability to various purposes. At the last State Fair, raisins made from a dozen or fifteen varieties of grapes were on exhibition—most from the Black Hamburgh; but larger one from the Rene de Nice, (recently, Californians think, figured in the colored frontispiece of the Philadelphia Gardeners' Monthly as the "Calabrian;") very fine ones from the Rose of Peru; a few small but by no means bad tasted ones from the Traminer; and I think the best looking ones from a grape here called the Sahtiaqua, which is closely allied to, if not identical with the White Malaga, which you import in saw-dust and stone jars. V. G. P. *Sacramento, Cal.*

Cow Losing her Milk.—Having seen in a former number of the Co. GENT., a paragraph headed "A Singular

Case," and the inquiry asked if others knew of such a case, I answer that in the spring of 1862 I had a three-year old heifer that calved and turned out a first-rate milker. In 1863 she calved again, and never gave one drop of milk, although the calf run with her and sucked for weeks—(at the same time he had another cow to suck, but still kept trying to get milk from his dam.) I intended to kill the cow before she had another calf, but she proved with calf and commenced making bag. I tried to milk and found water come from all her teats. She continued to make bag, to all appearances natural, and calved some three weeks ago. Result the same as last year—not a drop of milk. Her bag appeared full of wind and very large, but did not appear sore. I gave her aconite tincture, which reduced the bag in a short time, but not a drop of milk has she given. Now Messrs. Editors, what is the cause? If you or any of your readers can tell, your will oblige several of your readers. P. O. *Somers Wis., June*, 1864.

New Churn Power.—I notice in your CULTIVATOR for July, an inquiry for a Churn power, and as I have just completed an improvement for this purpose, I would like to inform the readers of your publications of the fact. My invention consists of an accumulating apparatus, driven by a small windmill placed upon the top of the building. The mill is portable, and has a single upright post with a base by which it is fastened to the roof with screws. From this mill a wire runs and connects to the accumulating machine, which it turns, and raises a weight whenever the wind blows, and the power of this weight can be used when the wind does not blow. The whole arrangement is made simple and self-operating, requiring no care further than throwing off the friction-brake when you wish to run the churn, and throwing it on when you wish to stop. It will also run a washing machine, or other light machinery. I am applying for a patent. ROBERT L. SMITH.
Stockport, Col. Co., N. Y.

Canada Thistles.—Can any of the correspondents of the Co. GENT. tell me of a good way to exterminate Canada thistles? I have tried rotation of crops without effect.

Will it Pay to Irrigate?—Through my farm run two brooks (called "branches" here) with fall enough to enable me to throw a small stream of water to the top of a hill forty feet high, and about four hundred feet from the stream to be used, from whence the water could be conveyed so as to effectually irrigate ten or twelve acres of garden or truck land. Will you, or some of your correspondents who may have experience in regard to irrigation, tell me whether it would pay to put up a hydraulic ram, or somebody's pump, for the purpose of irrigating this land, which lies mostly on two sides of the hill? An artificial pond could be formed on the hill, and a good supply of water thus kept on hand. If irrigation is advised, which is the best means of throwing the water up—by ram or pump? N. SARGENT. *Washington City.* [Our own opinion of the advantages of irrigation is so favorable that we should be strongly inclined to recommend its trial, but we shall be glad to receive any experience tending to throw light on the subject if our readers can furnish it. A water ram, or one of the self-acting pumps or "water-engines," manufactured at Watertown, N. Y., would be the means we should employ.]

Agricultural Papers.—E. K. F., *Easton, Conn.* In answer to your request for names of Agricultural papers, we may mention;

The Maine Farmer, weekly, Augusta, Me.
The New-England Farmer, weekly & monthly, Boston, Mass.
The Massachusetts Plowman, weekly, Boston, Mass.
The Boston Cultivator, weekly, Boston, Mass.
The American Agriculturist, monthly. New-York.
The Country Gentleman, weekly, Albany, N. Y.
The Cultivator, monthly, Albany, N. Y.
The Rural American, semi-monthly, Clinton, N. Y.
The Rural New-Yorker, weekly, Rochester, N. Y.
The Genesee Farmer, monthly, Rochester, N. Y.
The Ohio Farmer, weekly. Cleveland, O.
The Michigan Farmer, monthly, Detroit, Mich.
The Prairie Farmer, weekly, Chicago, Ill.
The Wisconsin Farmer, monthly, Madison, Wis.
The Canada Farmer, semi-monthly, Toronto, C. W.
The Farmer and Mechanic, monthly, Baltimore, Md.

Fatal Disease among Sheep.—Last fall I went into the State of Maine and purchased from farmers in the vicinity of the Kennebec river about two hundred and thirty sheep. Being a novice in the business, at the suggestion of Major Chissam, of Augusta, an ardent friend of the COUNTRY GENTLEMAN, which, as he assured me, "was supposed to know everything pertaining to sheep," I at once subscribed for your valuable paper, and also purchased "Randall's Practical Shepherd;" and with these universally acknowledged "Sheet Anchors," I set sail, as I supposed, without the slightest chance of getting aground. But the "fates" were not propitious, and I have not only got aground, but have got the "*biggest half*" of my flock *into* the ground also—in short, *Satan* seems to have set his seal upon my doomed flock, and they are daily going, and will soon be gone. Now, I wish to repeat the inquiry, "What ails the Sheep?" It is impossible for me to describe the symptoms of their disease (if it is a disease) for they are apparently well one day and are dead the next, throwing off life with hardly a struggle, and without any warning or symptoms of disease they "go out" like a flickering candle. Please enlighten me, if possible. I have about seventy lambs in the same pasture with the sheep, which seem perfectly healthy and vigorous, and do not at all incline to the foul example of their dams. Some of the sheep swell excessively after death. If they are poisoned, why are not the lambs affected also? Why is it? How is it? Pray tell us! J. C., *North Andover, Mass.* [We submit these inquiries without remark, as we cannot answer them satisfactorily.]

Blackberry Root Cordial.—Will you please ask some of your correspondents to give through your columns, a good recipe for making a cordial or syrup with the Blackberry root—giving also the best time for digging the root? There is a great call from the hospitals though the country for the various preparations of the Blackberry, and as the crop of berries is almost a failure this season, in the West at least, no doubt preparations from the root would be extensively made if the process were only known. J. R. PADDOCK. *Cincinnati.*

Massachusetts.—Hon. H. F. FRENCH of Boston, one of the Trustees of the State Ag. College, invites proposals for the purchase of land scrip to the amount of 100,000 acres out of the 344,000 appropriated for the endowment of the institution. The minimum price at which bids will be received is 80 cts. per acre—the bids to be put in on or before 23d day of the current month.

New-Hampshire.—Three methods, says an exchange, are proposed in New-Hampshire for the disposal of the national land grant for an agricultural school—one plan proposes to give to the Chandler Scientific Department of Dartmouth College the whole income of the grant made by Congress; another, to devote one-half or two-thirds in this way, and the rest to three agricultural farms in different parts of the State, with popular scientific lectures, agricultural publications, &c.; and the third is to establish a separate and independent college.

Electric Theory.—The Genesee Farmer quotes the theory of one of its correspondents, (of course without endorsing it,) in relation to the potato rot, the cause of which he thinks he has satisfactorily discovered. When the plants are kept well cultivated, and the soil porous and mellow, he asserts that electricity or "electric life," penetrates freely through the pores, and maintains a vigorous and healthy growth, but as soon as the plow and hoe are laid aside, the soil becomes compact, and the "electric life" cannot get through it. To avoid this calamity, "conductors" must be spread upon the land and plowed under, such as manure, woolen rags, &c.

The practice is good, the theory rather amusing than otherwise, and is a specimen of the many ways in which those who know nothing of the science endeavor to explain incomprehensible phenomena by the word "electricity." One might as well set up a theory that the music of the bobolink would cause plants to grow freely, provided the necessary requisites were supplied for this music to pass into the soil through the pores, by draining, mellow cultivation, and such conductors of the sound as yard manure and guano. One theory is as good as another.

WAY TO IMPROVE PASTURES.

The true way to improve a pasture is to plow it and cultivate the soil for a few years, and apply a liberal dressing of barn yard manure, or, turn under a crop of red clover, and then sow about three or four bushels of Indian corn per acre, as soon as the clover has been plowed under, and turn that under before frost injures it; and then, sow the ground with winter rye so late in the fall that it will not vegetate before the next spring, when the soil should be well seeded with three or four different kinds of grass seed which are adapted to the soil and to the locality.

In case there is an excess of water in the soil, the first operation should always be to render it dry, by underdraining the wet portions of the field; or, by adopting a system of thorough draining—making drains about two rods apart, over the entire field. Very many fields require such a system of draining before they will produce as much good pasture as they are capable of producing. And every intelligent farmer knows that a bountiful crop of tender and sweet grass cannot be raised on a soil that is inclined to be wet. It is true that a tolerably fair crop of some kinds of grass may be raised where there is an excess of moisture; but by draining that same soil, and by bringing it into a better state of fertility by thorough pulverization and more or less manure, the quantity of grass may easily be doubled and the quality very greatly improved.

In many parts of New-England there are many acres of pasture which it is very desirable to improve, without plowing the soil. These fields have been in grass for many successive years. And, in many instances, they have become "turf-bound," as it is termed; which means that there is a thin mat of old, tough, dried-up roots and moss on the surface, which obstructs very much the luxuriant growth of young and tender grass. Such fields cannot be rendered productive, to their highest capability, without inverting that tough sod, and bringing a new soil to the surface, thus starting a new system of roots, and a new turf. But it may be very greatly improved in productiveness. Therefore, the

Way to Improve Pastures without Plowing,

will be to top-dress the soil with fertilizers of some kind, and then give the surface a thorough harrowing, with the harrow teeth well sharpened.

The character of the soil will be a good guide, in a measure, for determining what kind of fertilizers may be employed most economically.

On many of the sandy loams and silicious sands of New-England, there will be nothing superior to a dressing of ground bone, harrowed into the soil in autumn.

In case the soil were not well turfed over, it would be better to defer the harrowing till spring. Then, after harrowing well, sow a few pounds of white clover seed, a few pounds of timothy, a few pounds of orchard grass seed, and a few pounds of Kentucky blue grass seed, mingled together, making in the aggregate from four to six quarts of seed per acre. Perhaps red clover might take the place of some other seed. But the chief idea is to seed the land well with a kind of grass seed that will flourish well in that particular locality.

In case ground bone be applied, it will be better to sow it before the soil has been harrowed, for the purpose of covering it slightly with earth, as a little moisture and heat will hasten the decomposition of the small fragments of bone: and the little roots will twine around these small particles, and absorb them, as fast as the rain and heat will dissolve them.

On some soils, ten or twenty bushels of lime per acre will be the best top-dressing that can be applied after harrowing and re-seeding with grass seed. A few bushels of gypsum, also, mingled with wood ashes, will be a good dsessing.

In case, however, a farmer has a good quantity of barn-yard compost, well rotted, the most economical way will be to spread it evenly, late in autumn, and harrow it well in. Then, the next spring, sow grass seed of several different kinds, and harrow again.

This system of management will usually insure a good crop of grass. But pastures treated in this manner, should not be fed off until the middle of summer, or until the young grass is well rooted. And, sometimes, not a hoof should be allowed to go on the ground until autumn. If sheep or cattle be permitted to graze on such fields, just as the young grass begins to grow, their sharp teeth and hoofs will destroy it faster than it can grow. The grand reason why there are so many poor pasture fields in our country is, the grass is fed off too closely when it is very small.

S. EDWARDS TODD.

THE YELLOW STRIPED BUG.

EDITORS CO. GENT.—As I have been troubled a great deal with the yellow striped bug on my melon and squash vines, I tried everything I knew, read, or heard of, but without effect. At length the idea struck me of putting some wool around the stem of the plant, between the leaf and the dirt, and I found it to be quite a success. I hasten to communicate it for the benefit of your readers. I just take a tag of wool, spread it in a funnel shape, put the dirty part next to the earth and the filaments around the plant, the leaves of which seem to catch the wool and pull it along with its growth, forming a complete net-work under the leaf, which is the point attacked by the bug.

Oaks Corners, N. Y. KATE WALKER.

Pressing Tobacco for Domestic Use.

Mr. James Laurie, of White county, Ind., writes to the American Institute Farmers' Club as follows:

Another man wanted to know how to manufacture tobacco. I will tell him how to press it for his own use tighter than tobacco was ever pressed by any other plan. Go to the wood pile or woods and get a hickory log two feet long and one foot over; bore two one-inch holes in the end down to three inches of the other, and then make a good hard wood ram-rod and mallet, and proceed to load it with wads of tobacco, pounding it down well; then make one-inch pins of hard wood and drive into each hole as far as possible. This will press his tobacco so that it will look like wax. You must split the press to get it out, but one such press will hold 10 or 15 pounds, so that they will not have to be often made for home use.

The Country Gentleman.—I like it very much, and take every occasion to urge the farmers in this region to subscribe. Every copy or new number is worth a year's subscription to any farmer. I have 65 acres of land here, and I consider the CO. GENT. as necessary as the utensils on the farm. C. T. G. *Berkshire.*

AGE OF APPLE-ORCHARDS.

We observe in a number of the agricultural papers, statements from correspondents, particularly toward the South and at the West, that apple orchards begin to decline and decay at an average period of about 40 years from planting. We cannot learn that there are any orchards in the Western States that exist much longer than this period. There are some in New-York and New-England that are somewhat older, but even many of these show indications that they have past their prime. Good cultivation, in some instances, does not seem to prolong their existence, and it is questionable if the best system of pruning would produce greatly differing results. We invite information on this subject—for if this is generally the case, and the fact is known to planters, it would save unnecessary expense in attempting to renovate old orchards that are too old to be renovated. We are aware that works on fruit speak of apple trees that are two centuries old, but are not these instances very rare, if they exist at all in this country, however common they may be in the more equable and cooler climates of some European countries. The dwarf pear is often quoted as lasting fifty years in Europe when subjected to the best management and pruning. In the best dwarf pear regions in the United States there are now many trees twenty-five years of age, of those few sorts which succeed best. The question occurs, how much longer lived the apple is than the dwarf pear, when the latter is grown under the most favorable circumstances?

NOTES FROM DR. FITCH.

MESSRS. EDITORS—Yesterday evening in taking my customary stroll through the garden, I stopped to examine a young cherry tree which was infested with aphis or plant lice,—in fact swarmed,—when my attention was called by observing a large number of green colored insects in the shape of bugs, (or some such "varmint,") about three-eighths or one-half of an inch in length, in different directions, crawling about the leaves. Another pest thought I, and immediately commenced knocking them off and killing them, but finding it a harder task than I had anticipated, as was the case several nights ago when I tried to exterminate the lice by immersing them in soap suds, which did not seem to harm them at all, I left them to their fate. This evening on proceeding to the said tree, I was struck by the *nearly total disappearance* of the aphis: on examining more closely, I soon perceived the reason—the green bugs I found to be busily feeding upon them, and with great gusto literally devouring them alive. Not having seen any notice of this parasite in the Co. GENT., I enclose two in a quill, that we may have Dr. FITCH's opinion upon them. J. F. C.

L'Original, C. W., June 21, 1864.

The two "green bugs," which J. F. C. enclosed in a quill and forwarded from Canada West, June 21st, came to hand yesterday, July 7th. On the journey hither, one of them becoming overcome with hunger, fell upon and devoured its comrade. This meal imparted to the survivor sufficient vigor and strength to enable it not only to withstand the fatigue and discomfort of the protracted journey, but also to go on and complete its transformations whilst on the way, changing to a pupa, and subsequently to a perfect insect, which latter, with the empty skin or shell of the former, I find in the quill—the insect actively struggling but pent up in too close quarters to enable it to move about, now that its body has become so much broader and shorter than it was when it was put into the quill in its larva state. It is a species of lady-bird, and is named the Five-marked Coccinella, (*C. 5-notata* of Kirby,) which name was bestowed upon it from the number of black spots upon its bright orange yellow wing covers. I have not time at present to say more of this insect. A full description of it will be found in my Sixth Report on Noxious Insects, in the Transactions of our State Agricultural Society for 1860, page 849, and an account of the larvæ of these lady birds and their habits is given in the preceding pages 842 to 846.

The "large young butterfly," of which R. O. T. of Otoe Co., Nebraska, wishes to be informed the name through the COUNTRY GENTLEMAN, is the Cecropia Emperor Moth, (*Attacus Cecropia* of Linnæus,) of which, and its larva, a short notice is given in my Third Report, in the Transactions of 1856, p. 338.

A much more important remittance from the same gentleman, is the Nebraska "Bee-killer." This proves to be a new and undescribed insect, of which I am working out the characters and preparing an account, which will probably appear in the next number of the COUNTRY GENTLEMAN. ASA FITCH.

East Greenwich, N. Y., July 8, 1864.

WHEAT IN CANADA WEST.

EDS. CO. GENT.—I got two bushels of the "Lambert" wheat which was advertised in the CO. GENT. last August, from Mr. F. C. Wetherby, Columbus, Ohio. It has done well, has escaped the midge entirely, and promises a good crop. The straw is strong and stiff, and the grain well filled up. The Mediterranean, sowed in the same field and under equally favorable circumstances, is pretty badly affected by midge in low places where it is rather backward, but on higher ground and more forward, is very safe. Soules wheat, which is the kind mostly grown here, is almost entirely destroyed by midge. A great many farmers are cutting it green for fodder. In this and adjoining counties, farmers have depended principally upon winter wheat, but it has been failing these two or three years, and this year they will sustain heavy loss, as the crop on the whole is a complete failure. I presume the only way we can account for the Lambert wheat escaping the midge is that it ripens earlier than the other varieties. Its being further advanced when the fly makes its appearance prevents their depositing their larvæ in the grain. Could you, or any of your readers, recommend any kind of WHITE wheat that yields well, is midge proof and hardy? The objection to the Lambert is that it is *red wheat.*

The great difference between your money and ours at present prevents us from selling stock to go to the States, and we feel this a loss, but I find that the farmers in New-Brunswick are making a move in the introduction of improved stock. I lately sold a choice lot of sheep to a county agricultural society in that province, consisting of six Leicester ewes, three Leicester rams and three Cotswold ewes. They are to be sold by auction to members of the society. Your paper is highly appreciated and very welcome.

Edmonton, C. W., July 12, 1864. JOHN SNELL.

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July 21—w&mtf.

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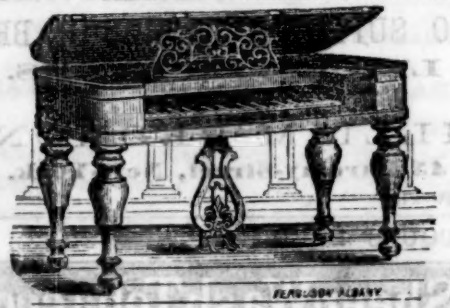

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CONTENTS OF THIS NUMBER.

The Farm.

One Hundred Bushels of Corn per Acre,..... 233
Trimming Hedges, by C. G. TAYLOR,..... 235
Preparing Land for Fall Crops, by L.,..... 237
Cutting Grass Early and Feeding Sheep on Mowing Lands, by ED. R. ANDREWS,..... 239
Cultivating and Harvesting Barley, by DANIEL PARKER,.. 242
How Often can Clover be Raised on the same Land, by L., 244
Letter from the Homestead, by JUDGE FRENCH,..... 244
Yield of Crops per Acre in Different States, by C. T. ALVORD,..... 246
More about Salting Hay, by N. P. ATKINSON,..... 247
True's Potato Planter, by S. E. TODD,..... 248
Harder's Thrashing Machinery,..... 249
A Summer Fallow or Clover-Lea for Wheat instead of Sowing after Spring Crops, by F.,..... 250
The Chinch Bug in Iowa, by SUEL FOSTER,..... 252
Notes for the Month,..... 256
Inquiries and Answers,..... 259
Way to Improve Pastures, by S. E. TODD,..... 261
Wheat in Canada West, by JOHN SNELL,..... 262

The Grazier.

Sales of Stock,..... 234
Onondaga Wool-Grower's Association,..... 235
Parasites Infesting the Bodies of Animals, by L. BARTLETT, 238
The Westfield Ox again, by S. S.,..... 243
Nankin Sheep, by J. T. WARDER,..... 247
The Wool Market,..... 251
Care of Ewes—Raising Lambs, by W. F. BAGGERLY,..... 251
Sheep Growing,..... 253
Sheep Shearings, by SANFORD HOWARD,..... 255

Horticultural Department.

Management of Fruit Trees in Summer,..... 234
Dwarf Pears—Magnolia, &c.,..... 240
Raising Grapes from Single Eyes, by E. W. HERENDEEN,.. 240
Cases for Conveying Small Fruits to Market,..... 243
Garden of L. B. Gavit, Lyons, N. Y.,..... 246
Screens for Shelter,..... 248
Orchard Whiffletrees,..... 248
Peaches Every Year, by LEVI BARTLETT,..... 252
The Yellow Striped Bug, by KATE WALKER,..... 261
Age of Apple Orchards,..... 262

Poultry-Yard.

Good Layers, by G. M. G.,..... 239
Care of Young Turkeys, by S. E. TODD,..... 242

Domestic Economy.

Directions for Bread Making,..... 241
Different Kinds of Yeast,..... 241
Cast Iron Sugar Pans,..... 241
Hay Maker's Drink, by L. F. SCOTT,..... 253
Raspberry Vinegar,..... 253
How to have Cool Cellars, by F. G.,..... 255
Pressing Tobacco for Domestic Use,..... 261

Birds.

Baltimore Oriole, by J. P. NORRIS,..... 249

Bee-Keeper's Department.

Italian Bees, by M. QUINBY,..... 254

The Entomologist.

Notes from Dr. Fitch,..... 262

Illustrations.

Dwarf Pears,..... 240
Grape Cutting,..... 240
Gapes in Chickens,..... 242
Fruit Cases,..... 243
True's Potato Planter,..... 248
Orchard Whiffletrees,..... 248
Harder's Thrashers,..... 249
Baltimore Oriole,..... 249

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